

# **Is Job Training Justified?**

**An Analysis of Job Training Services as Administered by  
Utah's Department of Workforce Services**

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## This Report

Copies of this report can be downloaded at the following url:

<http://jobs.utah.gov/wi/trainingstudy>

# Chapter 1

## Introduction

Budget shortfalls stemming from the recessionary economy have prompted the decision to examine federal funding of existing social programs. Intense scrutiny has befallen many programs, including those designed to provide training for unemployed and underemployed workers across the nation. While the need to train and retrain workers for the dynamic skill sets required by the in-demand occupations of present-day labor markets is a widely accepted truth and a high-priority issue for the Obama White House, the effectiveness of current training programs has been brought into question. In January 2011, the Government Accountability Office released a report evaluating the effectiveness of federal job training programs (GAO, 2011). In this report, which focused on identifying potential budget savings opportunities through the correction of program inefficiencies, it was noted that many federal programs designed to help unemployed and underemployed overlap in their services, and that “Little is known about the effectiveness of the employment and training programs we identified because only 5 reported demonstrating whether outcomes can be attributed to the programs through an impact study . . .” (p. 11).

This comment demonstrates two problems in the evaluation of job training programs that the research described in this paper attempts to address. The first problem is that policymakers and federal officials who decide how to fund the programs and evaluate their merit appear to be unaware of the rigorous job training program analyses that exist in the academic research. As will be demonstrated in Chapter 2 of this paper, job training analysis is a well-developed subject with a long research history. What perhaps is lacking therefore is a connection between the academic analysis of job training services and the policy and budget examinations that are conducted by the federal government.

The second problem is the lack of sophistication present in the standard federal reporting requirements associated with the programs. The GAO report specifically recognizes impact studies as an appropriate indicator of the value of training programs. Simple descriptive statistics addressing participation levels and spending patterns do not measure effectiveness of training programs, nor do the traditional outcome mea-

asures common to those programs. So while the current design of these reports may indeed satisfy budget and accounting requirements, the statistics in the reports do not speak to the question of effectiveness of the programs.

As a state agency charged with administering some of the largest training programs under scrutiny in the GAO report, the effectiveness of the job training programs, specifically the effectiveness of the manner in which the services are rendered at the state level, is an issue of great concern to Utah's Department of Workforce Services (DWS). Examining these issues will indeed guide DWS policy-makers to more effective budget and public service decision-making. The research presented in this report seeks to address the issues brought forward by the GAO report and the resulting questions surrounding job training programs. The following chapters describe the research agenda undertaken by the Utah Department of Workforce Services (DWS) to better understand the effectiveness of the job training programs from a state administration perspective. Chapter 2 discusses the academic background for training analysis and the methodology of matching for causal analysis. Chapter 3 describes the administrative data from DWS used to measure training service outcomes. Chapters 4 through 9 provide the results for each of the six training service categories. A discussion of the role of training service completion is presented in Chapter 10, and then the final chapter presents a summary of the important findings and some discussion of policy implications.

# Chapter 2

## The Methodology

### 2.1 A Brief Overview of Previous Job Training Studies

Active labor market policies (ALMPs) have been evaluated extensively throughout North America, Europe, Australia, and many other countries around the world. ALMPs encompass a broad group of government employment and training services that include job search assistance, job vacancy information, job matching assistance, job readiness training, wage and employment subsidies, classroom training, and on-the-job training. The majority of the analyses of ALMPs have typically measured the impacts of several of these services and combined the results within one report. Following in this tradition, the research presented in this report examines several distinct employment and training services as provided by Utah's Department of Workforce Services. This study estimates the employment and earnings impacts for three types of classroom training, two forms of wage and employment subsidies, and one job readiness training service. The employment and training literature has been summarized thoroughly in a number of previous articles. This brief overview centers on presenting the broad general results found in two recent summaries. These studies reflect the current, generally-accepted views about the effectiveness of job training programs.

Focusing only on the experimental job training literature, King (2004) provides a detailed overview of a number of job training experiments and summarizes the results according to the populations that job training programs have typically targeted. For disadvantaged adults, King reports that women had strong earnings gains between \$3,000 to \$6,000, depending on the program, after seven years, while men exhibited small, statistically insignificant results of \$1,268.<sup>1</sup> As for youth receiving some form of training, females showed positive results and males showed negative results, but in both cases they were statistically insignificant.

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<sup>1</sup>The results for disadvantaged adults and youth are given in 1996 dollars.

Only two experimental studies on the impact of training for dislocated workers were reported in King’s survey. In one study, women showed statistically significant earnings gains, but men did not. Although the other study seemed to indicate positive impacts from attending community college, King was critical of the design of the evaluation. Overall, King found that these two studies did not offer sufficient evidence to draw any conclusions about the effects of training on dislocated workers.

Finally, King broadly summarizes the effects of training for welfare recipients based on several experimental studies. Welfare recipients showed significant employment and earnings effects from training, but the gains were usually not large enough to lift these people out of poverty. However, as a result of training, welfare recipients demonstrated reduced dependency on welfare and greater participation in the labor market. Programs emphasizing “labor force attachment” (i.e., internships, on-the-job training, etc.) tended to produce immediate gains, but programs emphasizing “human capital development” (i.e., classroom training) produced larger long-run gains.

In the second summary of the job training literature reviewed in this section, Card, Kluve, and Weber (2010) performed a meta-analysis on 97 experimental and non-experimental job training evaluations conducted between 1995 and 2007 from a large number of different countries. Although no estimates of the sizes of the employment and earnings impacts were reported in their analysis, they did indicate the statistical significance of various types of training services.

Card et al. examined three types of training programs that are of relevance to the research contained in this report. Classroom and on-the-job training were analyzed together, while private and public subsidized employment services were analyzed individually. An important conclusion that the authors draw is that classroom and on-the-job training may appear to have negative or insignificant impact estimates when evaluated for short periods of time. They note that two to three years after receiving these types of training, individuals will tend to experience positive, statistically significant employment and earnings impacts. In their examination of private and public subsidized employment services, Card et al. found that these types of job training services were generally less successful as compared to other ALMPs and many studies exhibited insignificant results.

Based on these summaries, a few broad generalizations can be made regarding the impacts of job training. With respect to demographic groups, adult disadvantaged women tend to demonstrate positive, statistically significant impacts from training, while the impacts for adult disadvantaged men appear to be somewhat smaller and less often statistically significant. Youth programs appear to have very small impacts at best. Welfare recipients tended to demonstrate strong gains from training, while the evidence for dislocated workers was insufficient to draw any conclusions. With respect to types of training services, classroom and on-the-job training tend to produce large long-term impacts for both men and women, but they may not show positive impacts for the first several years after training. Subsidized employment and earnings programs appear to have little impact over the long run.

## 2.2 Experimental Versus Non-experimental Methods

The issue of whether non-experimental methods of data analysis produce estimates of employment and earnings impacts that are approximately similar to those for job training social experiments has been widely discussed and debated. The use of a randomized experimental design in social experiments is viewed as the benchmark method for estimating unbiased treatment effects within a given population. The reason for the preference of randomized experimental designs over non-experimental methods is that the randomization process eliminates potential biases in the estimates of impacts, in particular self-selection bias. For example, bias can arise because those who voluntarily choose to enter training may also have a high level of motivation relative to those who do not choose to enter training, thereby producing overstated estimates of the impacts of training. Therefore, the problem that faces non-experimental studies based on observational or administrative data is that individuals have not been randomly assigned to treatment, which opens the door to potential bias of the impact estimates.

Nevertheless, a variety of techniques have been developed that specifically attempt to address the issue of bias in non-experimental analyses. Among the most common techniques are instrumental variable estimation, regression discontinuity designs, and matching methods. Some researchers have criticized these non-experimental methods claiming that the estimates produced are biased in comparison to results stemming from randomized experimental designs (for a discussion, see Heinrich et al., 2008; 2009). However, several recent studies have compared the estimates produced from experimental and non-experimental designs and they generally find non-experimental methods to be relatively accurate.

In a comparison of 31 experimental and non-experimental evaluations of job training programs funded by the federal government, Greenberg, Michalopoulos, and Robins (2006) found that non-experimental results tended to be slightly biased downward as compared with experimental results in some cases. Both experimental and non-experimental estimates of the impacts of training on youth produced small estimates with the non-experimental results tending to understate the impact by several hundreds of dollars. Greenberg et al. found that the impact estimates for women tended to be large for both types of studies and they note that the results were quite similar. However, less confidence was expressed regarding the results for men, where the estimates for both experimental and non-experimental studies seemed to suggest little impact from training.

In a more recent study by Card, Kluve, and Weber (2010), the authors found stronger evidence in favor of the view that non-experimental results are comparable to experimental results. In their survey of 97 studies, they found no systematic bias between experimental and non-experimental designs. Similarly, Mueser, Troske, and Gorislawsky (2007) found that non-experimental methods, matching in particu-

lar, can yield estimates that are roughly equal to those estimated by a randomized experimental design.

Although some criticism remains over the use of non-experimental evaluation methods, a growing number of analyses suggest the development of a consensus among researchers that such methods are useful, informative, and accurate. Based on the recent literature, improvements in non-experimental methods and the quality of administrative data used in non-experimental studies have produced estimates that can be more confidently taken as good approximations to those from randomized experimental designs.

## 2.3 Propensity Score Matching

Matching is one of the most widely used methods for analyzing treatment effects in observational studies. Matching can be performed in many different ways. This research used propensity score matching in order to construct a suitable control group for the treatment group, where the treatment group refers to individuals who entered into a particular type of training. The characterization of propensity score matching presented in this section is intuitive and non-technical (for more detailed discussions of propensity score matching and matching in general, see Caliendo and Kopeinig (2008), Heckman et al. (1999), Imbens and Wooldridge (2009), Morgan and Winship (2007), and Mueser et al. (2007)).

As mentioned previously, the use of a randomized experimental design is generally viewed as the best method for estimating unbiased treatment effects. In essence, propensity score matching attempts to simulate a randomized experimental design by providing a method by which comparable treatment and control groups can be constructed. The method is basically a two-step process. The first step is to estimate the propensity score. The propensity score is the probability that an individual receives treatment as determined by all of the observed variables. The second step is to match individuals in the treatment group with one or more individuals in the control group based on the estimated propensity score. The goal is to match each individual from the treatment group with a member from the control group such that the difference between their propensity scores is minimized, or to match several individuals from the control group if they fall within some given measure of closeness to the treatment individual. Once the matched control group has been determined, the treatment and control groups are pooled together and used to estimate the average treatment effect.

Propensity score matching addresses the issue of selection bias because, for each individual from the treatment group, one or more individuals from the control group have been selected who have the same probability of receiving treatment, based on the observed data. In the case where several individuals are selected from the control group, they are weighted in order to equalize their influence within the data set. All of the variables in the data set will exhibit some particular relationship to the probability

of receiving treatment so that by matching on the propensity score, individuals with similar characteristics will tend to be selected. Consequently, the matched treatment and control groups will tend to have the same average characteristics. While there may not be any individual in the treatment group that precisely matches an individual in the control group, propensity score matching will generally produce treatment and control groups that, on the whole, have well-balanced characteristics across the two groups. When both groups have the same general characteristics but differ only with respect to receiving treatment, then whatever difference exists between the treatment and control in terms of the outcome variables can be attributed to the treatment.

## 2.4 Matching Strategy and Measurement of the Outcomes

The matching method used in this research was one-to-one, nearest-neighbor matching, where matching was based on an estimated propensity score. Within the job training literature, a large number of different matching techniques have been used to estimate the impacts of training on employment and earnings. However, Mueser et al. (2007) found that the estimates produced by a variety of different matching methods tended to be very similar. Consequently, one-to-one, nearest-neighbor matching was chosen for interpretational simplicity and ease of implementation.

The two outcome variables examined in this study are employment and earnings. Employment is measured as a binary variable, while earnings is measured as a continuous variable. The method used to measure the average treatment effect was a simple difference in means, where the standard errors were based on a *t*-test for the mean difference.

The determination of the appropriate measure for the standard errors associated with the average treatment effect estimates is currently an unresolved issue (for a discussion, see Winship and Morgan, 2007). A proper estimate of the standard error should take into consideration several sources of uncertainty, including the size of the average treatment effect, the relationship between the treatment group and the external population, and the closeness of the matches. In the course of estimating the impacts contained in this research, several different methods for calculating the standard errors were performed for subsets of the data. The three types that were compared were the Abadie-Imbens standard errors (Abadie and Imbens, 2006), bootstrap standard errors, and standard errors derived from the *t*-distribution used to calculate the difference in means. In general, the bootstrap standard errors were the smallest and those based on the *t*-distribution for the *t*-test statistic were the largest, with the Abadie-Imbens standard errors typically falling in between the other two estimates. In order to provide the greatest confidence in the estimated impacts in this study, the standard errors reported in this research are based on the more conservative estimates found by using the *t*-distribution for the difference in means.

## 2.5 Design of the Analysis

Evaluations of government-funded job training have been designed in a variety of different ways. Many studies have examined the employment and earnings impacts of job training as it affects groups of individuals who qualify for particular government funding sources. For example, analyses have focused on the impacts of training for adult disadvantaged workers, dislocated workers, disadvantaged youth, welfare recipients, as well as other government-defined groups of funding recipients. Other studies have taken a different tack, examining instead the impact of particular types of training, such as on-the-job training, classroom training, and subsidized employment, among others. At the same time, certain aspects of the design of job training analyses have tended to be the same across a vast majority of the studies, establishing a sort of analytical tradition. Perhaps the most firmly established similarity in job training studies is the tendency to analyze men and women separately. The purpose of this section is to give a full characterization of the most important features of the design of the analysis as pursued in this research. The first issue concerns the types of treatment that individuals received.

Although in some cases several services offered by DWS were aggregated together, the strategy in this research was to group individuals according to very similar types of job training services. Instead of analyzing the impacts of training in general on the types of individuals receiving the services, this research examined the impact of particular services on the entire pool of recipients. Therefore, the individuals receiving a particular training service may be dislocated workers, adult disadvantaged workers, or welfare recipients. The only group that was specifically excluded from the analysis was disadvantaged youth. Job training was separated into six categories. What is traditionally referred to as classroom training in the job training literature was divided into three groups: High school diploma and General Educational Development (GED), occupational training (i.e., short-term certificate and vocational training), and degree programs (i.e., individuals pursuing an associate's, bachelor's, or master's degree). Two other categories that were analyzed separately are related to employment and earnings subsidies: Paid internships and unpaid internships. Finally, the sixth type of training examined in this study is life skills, which can be viewed as a form of job readiness training. Each of these job training service groups is analyzed separately as a form of "treatment" for which the average treatment effect is estimated.

Two outcomes were measured for each service: the percentage-point difference in employment between the treatment and control groups and the earnings difference between these groups. For each individual, employment and earnings were measured quarterly and tracked for 16 quarters. The choice of a four-year observation window was a consequence of the desire to have a large group of trainees, while, at the same time, utilizing only the highest quality data available. Based on these considerations, this study examined individuals who entered training in the first quarter of 2002

through the second quarter of 2006. Given that some types of training services, classroom training in particular, tend not to show positive impacts until several years after the completion of the service, a four-year observation window was deemed necessary for the purpose of determining the longer-term impacts of each job training service group.

It is important to note that the first quarter outcomes for employment and earnings represent the outcomes one quarter after the *initiation* of training. For some forms of training, such as life skills or short-term certificate programs that can be completed within a quarter, individuals may be actively seeking employment or may, in fact, be employed one quarter later. However, individuals pursuing an associate's degree may be engaged in classes for as long as two years and, consequently, may exhibit reduced participation in the labor market. The importance of this point will become clear when the discussion turns to an examination of the employment and earnings trends for training service groups in the following chapters.

Although the majority of variables in the data set were allowed to vary slightly during the matching procedure, the data was stratified across certain specific variables in order to achieve exact matching on some characteristics. Male and females were analyzed separately for each service due to differences in their labor market outcomes (Heinrich et al., 2008). Moreover, the approach of analyzing males and females separately has become a sort of tradition in the job training literature (Orr et al., 1996). The data was also stratified by regions within the State of Utah so that individuals receiving training were matched only with control group members from the same labor market area. Using the labor market area concept as determined by DWS, the data set was stratified on the basis of five regions: the Northern, Wasatch Front South, Mountainland, Eastern, and Western regions.<sup>2</sup> Exact matching within labor market areas is important because economic conditions and job opportunities can vary greatly across regions (Heinrich et al., 2008; Heckman and Smith, 1999).

In this research, all individuals who were assigned to some particular type of job training were included in the treatment group for the particular type of training in question. However, not all of these individuals completed their services. This research follows the same approach that was used in the National Job Training Partnership Act (JTPA) Study, where the treatment group consisted of all "assignees" to training and not just "enrollees" (Orr et al., 1996). King (2004) notes that in many non-experimental analyses of job training programs, only those who actually received training were included in the treatment group, which might suggest that

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<sup>2</sup>The counties that comprise the regions are defined as follows. Box Elder, Cache, Davis, Morgan, Rich, and Weber counties in the Northern Region; Salt Lake and Tooele counties are in the Wasatch Front South Region; Juab, Summit, Utah, and Wasatch counties are in the Mountainland Region; Carbon, Daggett, Duchesne, Emery, Grand, San Juan, and Uintah counties are in the Eastern Region; and Beaver, Garfield, Iron, Kane, Millard, Piute, Sanpete, Sevier, Washington, and Wayne counties are in the Western Region. Note that in several tables, the abbreviated forms "North," "WFS," "ML," "East," and "West" correspond to the Northern, Wasatch Front South, Mountainland, Eastern, and Western regions, respectively.

non-experimental analyses will tend to produce upwardly biased results in comparison to experimental studies. A primary goal of this research was to evaluate the outcomes for all individuals who receive training services regardless of whether they completed training or not. The view was that this strategy would produce more practical estimates reflecting what could realistically be expected of individuals entering into training. Therefore, the results found in this study should be comparable to experimental studies based on assignment to training instead of completion. The issue of the differences in outcomes for those who completed training as compared to those who did not is addressed in Chapter 10 to this report, where a decomposition of the outcomes on the basis of the level of participation is provided.

The last important feature of the evaluation design deserving mention is the source of the control group matches. The entire control group consisted of approximately 300,000 individuals that had made contact in some way with DWS during the observation period. A number of these individuals were receiving some form of social assistance, such as unemployment insurance benefits, food stamps, and Temporary Assistance to Needy Families (TANF). Others were case-managed individuals who were seeking assistance in developing their job search skills or overall job readiness. And for some, their only contact with DWS was the use of the internet-based labor exchange service. Thus, the control group represented the widest possible selection of individuals for which DWS has relatively complete information. By selecting a wide-ranging control group, the treatment group can be matched to individuals taken from a group that most closely resembles the entire labor market in the State of Utah. However, all individuals in the control group did receive some service from DWS, so this research cannot be perfectly externalized to the entire labor market. In order to control for programs that might distort incentives to actively pursue employment, matching was performed on the receipt of social assistance so that both groups would have similar incentives and disincentives toward seeking employment.

Even though the design of this non-experimental evaluation has sought to simulate an experimental design, it is important to state how the provision of government-funded job training differs from how treatment is administered in other types of settings. It is not true that members of the control group did not receive any type of classroom training or on-the-job training during the observation period of this study. What is true is that individuals in the control group did not receive any type of training through DWS. Job training services provided by the private sector were likely used by both treatment and control individuals. Therefore, it is not strictly correct to say that this research examined the impacts of training relative to those who received no training at all. Instead, this evaluation measures the incremental employment and earnings impacts that arise from the public provision of job training services in a market where all individuals have the choice to pursue other job training services as provided by the private sector.

# Chapter 3

## The Data

### 3.1 The Data Sources and Data Cleaning

The records collected by DWS in connection with administering the unemployment insurance and federal social assistance programs served as the primary source of data. The data used to measure labor market outcomes and pre-training labor market experience came from the state unemployment insurance wage record file. Information pertaining to the receipt of social assistance was collected as a part of the eligibility process for these programs. Demographic information was collected from several different sources. Because job training is viewed as the “service of last resort” in a sequence of employment-related services, all individuals assigned to job training were case managed. For these case-managed individuals, their demographic information was collected in the process of working with employment counselors. The other primary source of demographic information is the labor exchange system, where individuals enter personal information in order to gain access to the job information listed by employers.

The original data set of individuals who had entered training between the first quarter of 2002 and the second quarter of 2006, inclusively, contained over 44,000 individuals. Roughly 74 percent of this total data set was analyzed in this study. The initial data set was reduced primarily for the reason of narrowing the scope to particular services of policy interest to DWS. The number of individuals assigned to training was further reduced due to missing data, a lack of good matches, and obvious coding errors. Individuals who were assigned to youth job training programs were removed simply because the primary policy interest was in examining the core services provided for adults.

Missing data led to the removal of some individuals assigned to training. In some cases, though, unknown values were allowed into the analysis if both treatment and control groups had similar percentages of unknown values. When applying the matching procedure, unknown values were coded as dummy variables and matched upon in order to balance the treatment and control groups. However, for other cases

of missing data, individuals were eliminated. This was true for those variables upon which the data were stratified for the purpose of analysis, including gender, region, and training service.

When matching individuals assigned to the high school diploma and GED service group, a large number of them were excluded because a different matching technique was required for the analysis of this service group. One problem with using one-to-one, nearest-neighbor matching is that if there are not enough close matches in the control group for the treatment group, the relatively imprecise matches will be included in the control group. As a consequence, the differences between the treatment and control groups can become statistically significant. In order to avoid this problem, those receiving high school diploma and GED training services were matched using a one-to-one caliper matching approach, where the one nearest individual was selected out of all of the control group individuals falling within the acceptable range specified by the caliper.<sup>1</sup> If no control group member fell within the caliper range for a particular treatment individual, the treatment individual was excluded from the analysis. The application of this method resulted in the elimination of approximately 1,500 individuals from the training group.<sup>2</sup> This was the only training service where a significantly different matching technique was required.

Finally, apparent coding errors also led to the removal of individuals from the treatment group. Coding errors were most obvious in the earnings amounts in the unemployment insurance wage file. Instead of taking the approach of hunting down outliers specifically identified using statistical methods, it was decided to eliminate all individuals from the treatment and control groups whose quarterly earnings were in the top 0.05 percent of the combined treatment and control group data set. The rationale for this approach is that it was highly likely that any trainees receiving such high quarterly earnings were coded incorrectly. Furthermore, eliminating extremely high earners from the control group did not seem unreasonable given that

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<sup>1</sup>The caliper was set 0.1 of a standard deviation.

<sup>2</sup>The use of caliper matching did produce statistically significant differences ( $\alpha = .05$ ) between the total treatment group and the matched treatment group. In the matched treatment group, 50.6% of males were from Wasatch Front South as compared to 44.4% in the total treatment group; the proportion of females from Wasatch Front South increased from 46.8% to 50.2% after matching. More importantly, for both the female and male matched treatment groups, the proportion of TANF recipients decreased considerably (from 64.9% to 53.4% for females and from 22.5% to 15.5% for males). The female matched treatment group also experienced a just-barely statistically significant decrease in the percentage of food stamp recipients, a change from 83.5% to 79%. While the differences in proportions of food stamp recipients for females and Wasatch Front South residents for males and females were statistically significant at the five-percent level, these differences were not particularly concerning due to their relatively small magnitude. However, the differences in the proportions of TANF recipients did raise some concerns. Potential relationships between employment and earnings outcomes and the receipt of TANF payments were examined for males and females and these variables were found to be largely unrelated. Therefore, the differences in the proportions of TANF recipients should have negligible impacts on the estimated earnings and employment differences.

most individuals who qualify for training tend to have very low quarterly earnings. Nevertheless, this data cleaning approach requires disclosure because it does potentially alter the estimates and the standard errors in the analysis, even if the effect appears negligible.

## 3.2 Descriptive Statistics

Descriptive statistics are provided for only the 32,475 individuals that were studied in this report. Some descriptive statistics have been omitted from this section because they are discussed along with the results as presented in Chapters 4 through 9. Statistics found in Chapters 4 through 9 include the amounts of federal funding devoted to training service groups by region and the numbers of individuals who were assigned to particular training services by gender and by region. A comprehensive set of descriptive statistics for the training group are presented in Tables 3.1 and 3.2, while Table 3.3 compares selected characteristics of trainees with the general population of Utah.

**Table 3.1. Descriptive Statistics: Demographics**

	Counts	Percent of Total
<b>Gender</b>		
Female	21,477	66.1%
<b>Ethnicity</b>		
Hispanic	3,909	12.0%
<b>Race</b>		
White	26,953	83.0%
Black	1,337	4.1%
Asian	357	1.1%
Native American	1,728	5.3%
Pacific Islander	296	0.9%
More than one race	661	2.0%
<b>Educational Attainment (All Ages)</b>		
Less than high school	5,234	16.1%
High school diploma/GED	18,553	57.1%
Some college, associate's, or certificate	7,172	22.1%
Bachelor's degree or higher	678	2.1%
Education unknown	838	2.6%
<b>Other Characteristics</b>		
Limited English proficiency	1,147	3.5%
Disability	5,151	15.9%
<b>Age</b>	Mean	Median
At start of training	33.3	32

In Table 3.1, the proportion of females in the training group can be seen to be much higher than the proportion of males. This proportion is actually typical of most job training studies (see Heinrich et al., 2008). A greater number of women are usually eligible for training funding through TANF than men, which helps explain a large share of the difference. The ethnic and racial make up of the training group is somewhat different from the general population of Utah, but some categories are very similar. On the other hand, the levels of educational attainment are very different in the training group as compared to the statewide figures. The ethnic, racial, and educational statistics are probably best appreciated when they are compared directly with estimates for the State of Utah general population, and these comparisons are found in Table 3.3. However, it should be noted that educational attainment statistics in Tables 3.1 and 3.3 for the training group are different because, in the former case, the statistics are based on the entire training group and, in the latter case, they are based on individuals ages 25 and older.

**Table 3.2. Descriptive Statistics: Economic Characteristics**

	Counts	Percent of Total
<b>Recent Industry of Employment</b>		
Agriculture and mining	113	0.3%
Construction	624	1.9%
Manufacturing	1,572	4.8%
Trade, transportation, and utilities	2,863	8.8%
Information	277	0.9%
Finance and real estate	403	1.2%
Professional and business services	4,004	12.3%
Education and health care	1,660	5.1%
Leisure and hospitality	2,147	6.6%
Other services	292	0.9%
Public administration	297	0.9%
No associated industry	18,126	55.8%
<b>Social Assistance</b>		
Unemployment insurance	6,495	20.0%
TANF	12,376	38.1%
Food stamps	25,001	76.9%
<b>Pre-Training Labor Market Outcomes</b>		
Quarterly average of prior six quarters	Employment 45.3%	Earnings \$1,385
<b>Post-Training Labor Market Outcomes</b>		
Quarterly average of first year	Employment 49.7%	Earnings \$1,397
Quarterly average of second year	51.9%	\$1,924
Quarterly average of third year	51.3%	\$2,186
Quarterly average of fourth year	48.7%	\$2,298

Returning to the discussion of Table 3.1, at roughly 16 percent of the training group, a fairly large share of individuals are disabled. The last statistics deserving mention are the age statistics. For the working-age population of individuals between 16 and 64 in Utah, the mean age is 37.7 and the median age is 35.<sup>3</sup> In comparison, the group of individuals receiving training are considerably younger than the working-age population when measured in terms of either the mean or median.

Statistics related to labor market performance and economic incentives to seeking employment are presented in Table 3.2. The statistics describing the most recent industry of employment are based on employment by industry during the quarter just prior to entering training. Because a large number of individuals were unemployed, these individuals were coded as having “no associated industry.” At 12.3 percent, the largest share of trainees came from the professional and business services industries, while the smallest share came from the agricultural and mining industries. Large percentages of individuals were receiving various forms of social assistance, with nearly 77 percent receiving food stamps.

The “pre-training labor market outcomes” are based on employment and earnings for the six quarters just prior to being assigned to training. These variables were used in the matching procedure to find control group individuals with similar labor market experience to those in the training group. It should be noted that part of the explanation for the low average quarterly earnings lies in the fact that only 45 percent of the training group was employed on average during the six quarters prior to training. The “post-training labor market outcomes” are based on the first quarter after the individuals enter training, so some of the trainees may be involved in training during the first eight quarters of outcomes. Improvements in average employment and average earnings can be seen in the post-training outcomes. All of the earnings figures are expressed in nominal terms.

The last table compares selected characteristics of the group of trainees with the general population of the State of Utah. Table 3.3 compares the 32,475 individuals who were analyzed in this study with the American Community Survey (ACS) three-year estimates for Utah taken from 2005 to 2007. Although the dates do not exactly coincide between the observation period for the training group and the ACS estimates, they do overlap for approximately 1.5 years and should be relatively accurate for the purpose of comparing demographic characteristics.

The ethnic and racial composition of the training group is not all that dissimilar to the general population of Utah. While a higher proportion of Blacks and Native Americans constituted the treatment group in comparison to the general population, the differences for Pacific Islanders and those of more than one race were negligible. As it should be expected, educational attainment for individuals 25 and older is much lower among trainees than the general population. Just over 72 percent of the trainees in this study had a high school diploma, GED, or less. The group of trainees also has a higher proportion of working-age individuals with a disability as compared

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<sup>3</sup>Source: Current Population Survey 2010 annual average for the State of Utah.

**Table 3.3. Comparing Trainees to the Utah Population**

	<b>Trainee Data</b>	<b>Utah ACS 2005-07</b>
<b>Ethnicity</b>		
Hispanic	12.0%	11.1%
<b>Race*</b>		
White	83.0%	91.1%
Black	4.1%	1.0%
Asian	1.1%	2.0%
Native American	5.3%	1.2%
Pacific Islander	0.9%	0.8%
More than one race	2.0%	1.8%
<b>Educational Attainment (25 and older)</b>		
Less than high school	14.7%	10.0%
High school diploma/GED	57.5%	26.3%
Some college, associate's, or certificate	24.7%	34.5%
Bachelor's degree or higher	2.8%	28.2%
<b>Disability</b>		
Between ages of 16 and 64	15.8%	10.5%

\*The trainee data adds to less than 100% due to some with unknown race.

The ACS data adds to less than 100% due to rounding errors.

Source: American Community Survey, U.S. Census Bureau

to the general population. Individuals with low levels of educational attainment or disabilities will generally have fewer employment opportunities and one of the primary roles of state workforce agencies such as DWS is to increase employment opportunities for individuals in these categories.

# Chapter 4

## Degree Programs

### 4.1 Characteristics of the Trainees

The group of training services referred to as degree programs in this report consists of three training services offered under the employment plan objective of employment-related education. Individuals within the degree program services group sought the attainment of either an associate's degree, a bachelor's degree, or a master's degree. Degree programs were analyzed separately from other types of employment-related education under the assumption that formal degree programs would likely lead to considerably different earnings and employment outcomes as compared to other employment-related education training services such as short-term occupational training or vocational certificates. This assumption was validated based on the significantly different outcomes for degree programs and occupational training services that resulted from the analysis.

A total of 2,555 individuals assigned to a degree program training service during the observation period were analyzed. This represents just over 97 percent of all individuals who received this service in Utah during the time period under consideration. With the exception of special case extensions, training services in Utah are limited to a maximum length of two years. Consequently, the majority of individuals who received a degree program training service pursued an associate's degree, which accounted for 68.7 percent of all degree program trainees. Due to the two-year training time limit, individuals pursuing a bachelor's or master's degree had to demonstrate that they had previously completed a sufficient number of credit hours so that the degree could be finished within the two-year limit. Trainees seeking a bachelor's degree accounted for 29.6 percent of all degree program service recipients and master's degree trainees accounted for 1.6 percent.

Females accounted for a significant majority of those receiving degree program services, constituting roughly two-thirds of all degree program trainees. The proportions of individuals across the three degree program services also differed significantly by gender. Females pursuing an associate's degree made up 70.8 percent of all female

**Table 4.1. Counts for Degree Program Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Associate's Degrees	217	540	187	128	148	1,220
Bachelor's Degrees	170	139	64	50	69	492
Master's Degrees	4	4	2	2	0	12
Total	391	683	253	180	217	1,724
<b>Males</b>						
	North	WFS	ML	East	West	State
Associate's Degrees	56	148	256	28	48	536
Bachelor's Degrees	97	69	64	13	22	265
Master's Degrees	4	13	13	0	0	30
Total	157	230	333	41	70	831

degree program trainees, whereas the corresponding figure for males was only 64.5 percent. It follows, of course, that a larger percentage of males were pursuing bachelor's degrees or higher as compared to females. These differences across gender are likely the result of many factors including the eligibility requirements associated with the various federal funding sources, the occupational choices made by service recipients prior to training, the costs of the training programs that trainees chose to pursue, and possibly differences in the amount of college credit trainees had completed before entering training.

The proportions of individuals across the three degree programs also vary by region. These differences are presumably due in part to the presence of educational institutions in the different regions and in part to the policy decisions that are left to the discretion of regional directors. The regional differences can be highlighted in reference to the statewide averages. The Northern Region placed the highest proportion of degree program trainees in bachelor's degree programs. Of the females pursuing a degree in the Northern Region, 43.5 percent were working toward a bachelor's degree as compared to only 28.5 percent as a statewide average. The proportion was even higher for males in the Northern Region: 61.8 percent in degree programs were seeking a bachelor's degree as compared to 31.9 percent statewide. As a result, the Northern Region had the lowest percentage of individuals pursuing associate's degrees. The Wasatch Front South Region had the largest percentage of female degree program trainees pursuing an associate's degree relative to the statewide average (79.1 percent compared to 70.8 percent). For males pursuing a degree, the Mountainland Region had the highest proportion working toward an associate's degree relative to the statewide average (76.9 percent as compared to 64.5 percent).

Total funding amounts for degree program trainees that were directly administered by DWS are presented in Table 4.2. Degree program trainees may have received addi-

**Table 4.2. Funding Sources for Degree Program Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
WIA A	\$260,047	\$136,600	\$74,658	\$54,862	\$68,882	\$595,050
WIA DW	\$136,336	\$138,343	\$41,150	\$5,760	\$29,253	\$350,843
WIA Y	\$0	\$0	\$998	\$0	\$0	\$998
TANF FEP	\$121,065	\$49,871	\$77,795	\$38,915	\$43,203	\$330,850
TANF Non-FEP	\$129,585	\$102,028	\$68,093	\$74,375	\$75,105	\$449,185
NAFTA/TAA	\$329,035	\$96,561	\$99,484	\$0	\$7,318	\$532,399
All Others	\$0	\$0	\$2,543	\$0	\$1,949	\$4,492
Total	\$976,069	\$523,403	\$364,722	\$173,911	\$225,711	\$2,263,817
<b>Males</b>						
	North	WFS	ML	East	West	State
WIA A	\$124,014	\$65,384	\$54,176	\$54,486	\$38,634	\$336,694
WIA DW	\$175,396	\$188,633	\$84,604	\$4,433	\$20,299	\$473,364
WIA Y	\$0	\$0	\$0	\$0	\$0	\$0
TANF FEP	\$4,160	\$0	\$8,243	\$0	\$2,292	\$14,695
TANF Non-FEP	\$55,750	\$36,500	\$82,155	\$23,568	\$34,959	\$232,932
NAFTA/TAA	\$181,857	\$358,221	\$1,468,431	\$22,132	\$23,230	\$2,053,871
All Others	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$541,176	\$648,737	\$1,697,609	\$104,620	\$119,414	\$3,111,556

Note: WIA A = Workforce Investment Act Adult, DW = Dislocated Worker, Y = Youth, TANF = Temporary Assistance to Needy Families, FEP = Family Employment Plan, NAFTA = North American Free Trade Agreement, TAA = Trade Adjustment Assistance.

tional funding from other federal sources (e.g., Pell grants from the U.S. Department of Education), but DWS does not have complete information on all possible sources of federal funding. Therefore, all funding amounts in Table 5.2 are only those federal funds that are directly administered by DWS. In terms of the three major federal funding groups, funding associated with the Workforce Investment Act (WIA) accounted for 32.7 percent of the total funding for the trainees receiving degree program services and TANF accounted for 19.1 percent. The trade-related job training programs in the third group, North American Free Trade Agreement (NAFTA) and Trade Adjustment Assistance (TAA), constituted 48.1 percent of degree program funding.

The average funding amounts for degree program trainees exhibited the greatest disparity with respect to gender of the four DWS-funded training service groups examined in this study. On average, males received \$3,744 and females received \$1,313 in funding, implying that females received only 35.1 percent of the amount received by males. This large difference is primarily a consequence of the large amount of trade-related funding directed toward degree programs. With 48.1 percent of the funds coming from NAFTA and TAA, degree programs had the highest percentage of its total funding coming from trade-related programs as compared to the other training

service groups. Because international trade tends to adversely affect manufacturing more than other industries and manufacturing is a male-dominated industry, the high percentage of trade-related funding corresponds to the presence of a large number of trainees having previously worked in the manufacturing sector. Of the 831 males who entered into degree program training services, 58.6 percent worked in manufacturing in the quarter prior to the start of training, which is the highest percentage of all of the groups of services. In contrast, only 9.4 percent of female degree program trainees worked in the manufacturing sector before beginning a degree program training service. Consequently, 79.9 percent of all degree program trainees that received NAFTA or TAA funding were male and only 20.1 percent were female. Finally, by noting that the average funding amount for degree program trainees receiving NAFTA/TAA funding was \$6,665, as compared to \$2,601 for TANF recipients and \$3,009 for WIA recipients, the characterization above explains most of the disparity in average funding amounts by gender.

## 4.2 The Results

With the exception of only one region, the earnings and employment outcomes for both males and females in degree programs follow a similar pattern, which can be seen in Figures 4.1 through 4.4. Because the outcomes were measured beginning at the time individuals entered training, degree program trainees could be enrolled in courses for the entire first two years of the four-year outcome period. As a result, earnings and employment differences for males and females in all of the regions were negative in the first several quarters. However, a steady upward trend is noticeable such that earnings and employment differences become positive within one to two years after the commencement of training, with only one region excepted. By the end of the observation period, the upward trend moves far enough into the positive region to fully compensate for the initial negative differences, and consequently produces positive net results for nearly every region. Overall, the results for degree program trainees are generally strong and show relatively large earnings and employment differences, even if it may take some time for these results to materialize.

At the statewide level, earnings differences for both males and females are negative for the first six quarters after starting training, but positive for all subsequent quarters. By the fourth year, the average quarterly earnings difference for females is \$852 and reaches a high of \$955 in the sixteenth quarter. Males average \$1,186 per quarter more than their control group in the fourth year and their earnings difference rises to a high of \$1,304 in the sixteenth quarter. As for statewide employment outcomes, females show positive employment differences in the fourth quarter, while males do not show positive employment differences until the seventh quarter. Even though the average employment difference over the four-year period is 3.9 percentage points for females and 0.9 percentage points for males, by the end of the fourth year the employment difference is roughly the same for both males and females. In the

fourth year, females averaged a 9.3 percentage-point improvement relative to their control group, while males averaged a 9.0 percentage-point improvement.

At the regional level, the urban regions tended to show more clearly recognizable upward trends in earnings and employment outcomes for both males and females. The Northern Region, the Wasatch Front South Region, and the Mountainland Region encompass the major urban areas, with the exception of the St. George metropolitan statistical area (MSA) in the Western Region. The four-year sum of earnings differences for males in the Mountainland Region deserves additional commentary with respect to interpretation. Even though this sum is a relatively large negative number of  $-\$3,375$ , it would be incorrect to conclude that degree programs have no effect on the earnings of males in this region. The negative sum is primarily the result of long initial period of negative differences that are not overcome by positive differences within the four-year observation period (see the Mountainland graph in Figure 4.2). In the fourth year, male degree program trainees in the Mountainland Region earn a quarterly average of  $\$1,292$  more than the control group. If the observation period were extended to five years, it is likely that these trainees would exhibit a positive five-year sum of earnings differences.

As for the rural areas, the Eastern Region and Western Region account for the majority of the rural counties in Utah. The results in these areas are based on much smaller numbers of trainees than the urban areas, which explains some of the variability in the outcomes. In the Western Region, the earnings and employment differences for both males and females show the typical initial upward trend, but then the trends appear to flatten between the first and second year after beginning training. Nevertheless, male and female earnings differences are always positive from the sixth quarter onward. Females show a generally positive employment difference, averaging 4.2 percentage points better than the control group over the four-year period. Males, on the other hand, show some initial improvement in employment, but it essentially disappears in the fourth year. The Eastern Region also exhibits some results that depart from the general pattern. The results for female degree program trainees show the typical steady increase in earnings and employment differences, but there is a slight downward trend during the fourth year. The outcomes for males, however, form the one set of results for degree program trainees that are distinctly different. While the earnings and employment differences are initially negative, just like the results for all of the other regions, they never show an upward trend and are never positive. It should be noted, however, that there were only 41 male degree program trainees in the Eastern Region, which was the smallest group that was analyzed in this study. Thus, these results should not be given too much weight.

The results for degree programs are summarized as the four-year sums of differences in earnings and the four-year average percentage-point differences in employment in Table 4.3.<sup>1</sup> As a very simplified method of determining if the returns to

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<sup>1</sup>Because the results can exhibit a time-dependent trend, the summary outcomes should be examined in conjunction with the trends represented graphically in the subsequent figures.

**Table 4.3. Summary of Outcomes for Degree Program Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	\$6,583	\$4,097	\$3,604	\$4,147	\$4,027	\$4,585
Four-Year Average of Employment Differences	3.5	2.4	6.3	6.7	4.2	3.9
<b>Males</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	\$3,642	\$6,321	−\$3,375	−\$20,203	\$7,747	\$741
Four-Year Average of Employment Differences	3.2	1.2	1.0	−12.5	2.4	0.9

training justify the costs, the average training cost per degree trainee can be compared against the four-year sum of earnings differences. The average cost per trainee can be calculated using Tables 4.1 and 4.2. For female degree program trainees, the four-year sum of earnings differences is larger than the average amount expended statewide and in all of the five regions. However, the four-year sum of earnings differences for male degree program trainees were only larger than the average costs in the Northern, Wasatch Front South, and Western Regions. The Mountainland Region, which had the largest number of male degree program trainees, exhibited a four-year sum of earnings differences per trainee of −\$3,375. As mentioned above, the earnings differences for males in the Mountainland Region were trending upward throughout the four-year observation period and it is likely that they would exhibit a positive net sum of earnings differences given a five-year observation period. Therefore, male degree program training taken as a whole could produce a sum of earnings differences in five years that would cover the total costs. Based on the results for both males and females, the total sum of four-year earnings differences for all degree program trainees, both male and female, minus the total expenditures for these services produces a net positive amount of \$3,145,000.

Figure 4.1. Degrees: Earnings Outcomes for Females

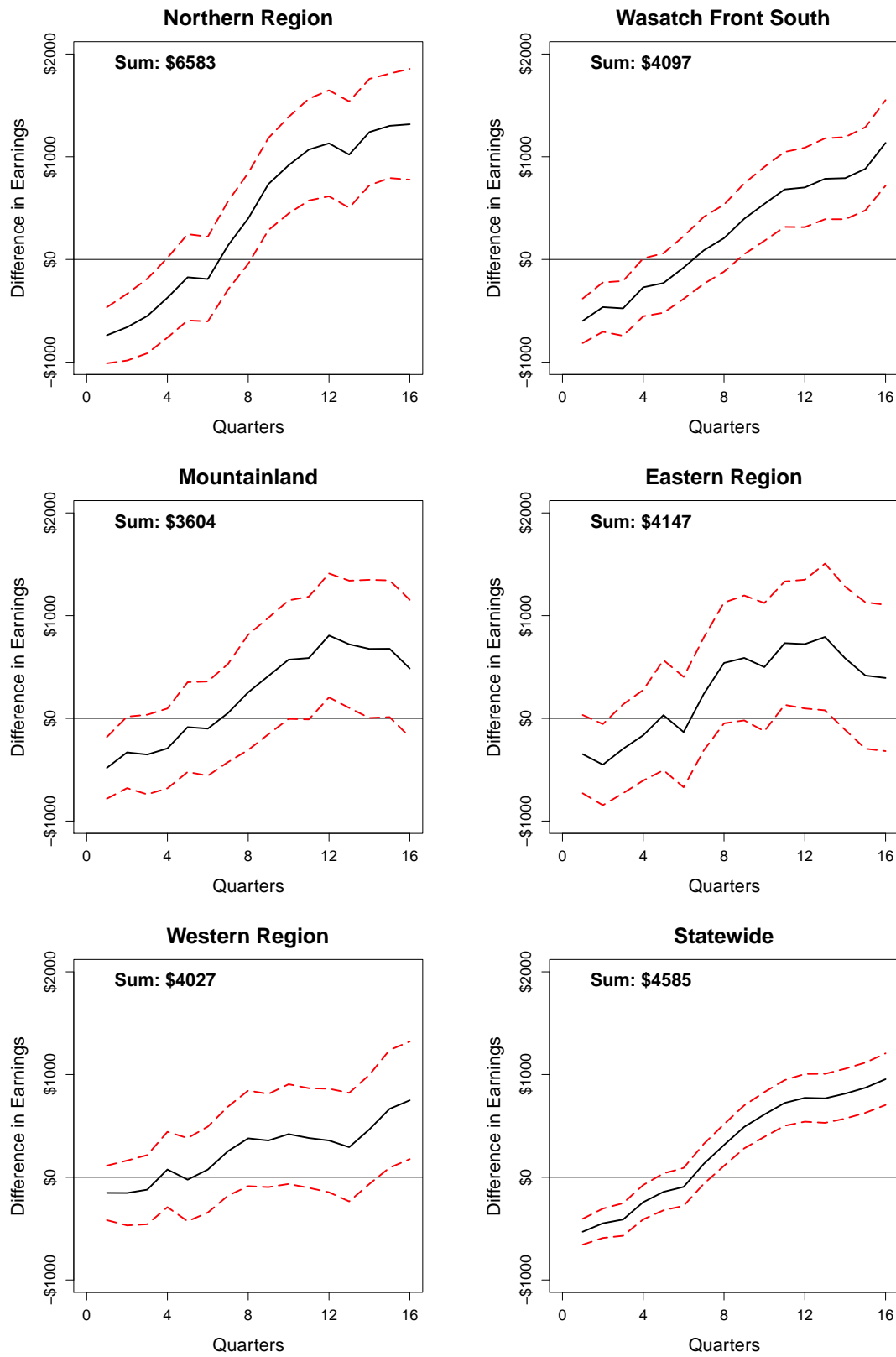


Figure 4.2. Degrees: Earnings Outcomes for Males

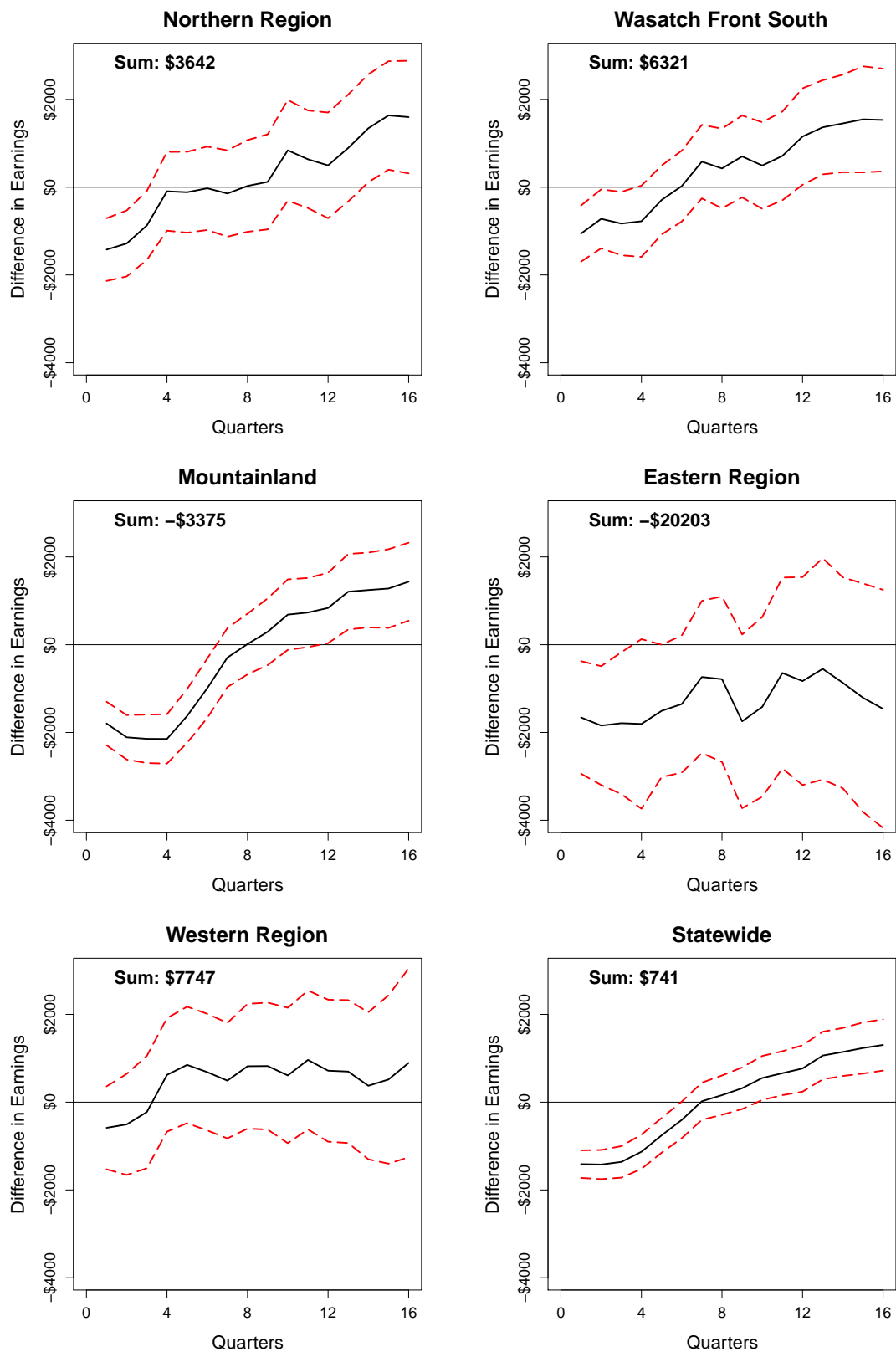


Figure 4.3. Degrees: Employment Outcomes for Females

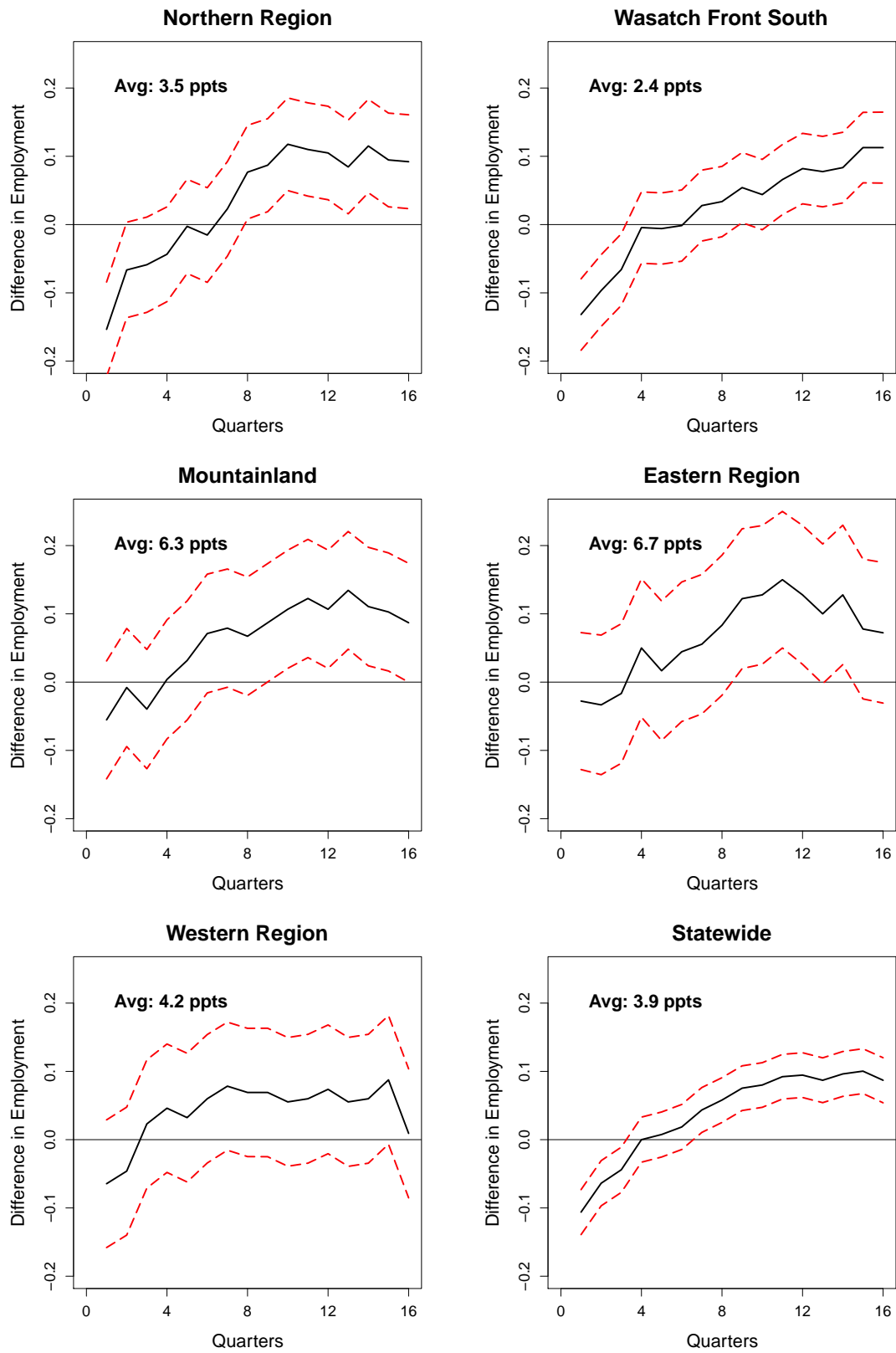
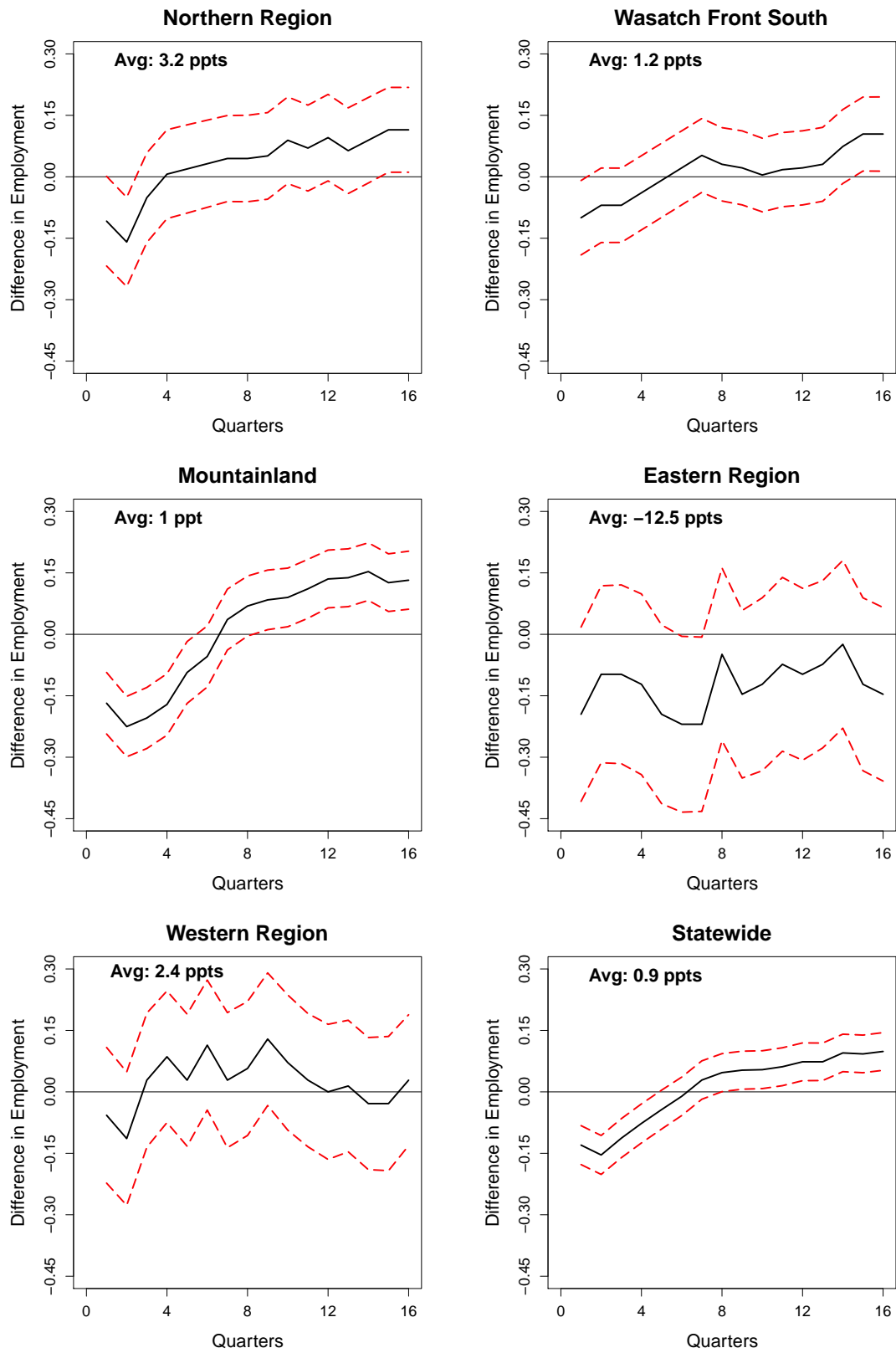


Figure 4.4. Degrees: Employment Outcomes for Males



# Chapter 5

## Occupational Training

### 5.1 Characteristics of the Trainees

The occupational training service group consists of two services: occupational skills training and other employment-related training. Occupational skills training focuses mainly on short-term certificate programs, such as certified nursing assistant, commercial driver's license, and various medical assistant programs, and the training typically takes place at technical colleges, community colleges, or universities. Training under this service may also take the form of attending a few courses, rather than completing a certificate program, in order to develop skills related to a particular occupation. The other employment-related training service is intended for training activities that do not fit precisely into other employment-related educational training categories. This service likely contains individuals whose primary training activity consisted of a few courses at a technical or community college. A strong distinction between these two training services should not be made as it is likely that they contain many similar and possibly identical activities.

Of the six groups of training services examined in this study, the largest percentage were enrolled in occupational training. Out of 32,475 total trainees that were studied, 9,390 entered into occupational training, which accounts for 28.9 percent of all trainees. The high percentage is largely a result of the policy that training must be completed in two years or less. For individuals without previously acquired college credit, occupational training is the most sensible option for employment-related education. Females make up a large majority of occupational trainees, accounting for 65 percent of the total. At the regional level, the Wasatch Front South Region accounted for the largest share of all occupational training service recipients at 42.6 percent.

Occupational training received the largest share of the total funding that was allocated to the six training service groups that were analyzed for this report. A total of \$10,587,168 in DWS-administered funding was spent on trainees receiving occupational training, which accounted for 59.8 percent of the total funding spent

**Table 5.1. Counts for Occupational Training Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Occupational Skills Training	1,335	1,652	407	522	368	4,284
Other Employment-Related Training	308	892	242	182	191	1,815
Total	1,643	2,544	649	704	559	6,099
<b>Males</b>						
	North	WFS	ML	East	West	State
Occupational Skills Training	658	970	292	207	119	2,246
Other Employment-Related Training	139	485	228	90	103	1,045
Total	797	1,455	520	297	222	3,291

on trainees in the six service groups. The average amount received by females was \$791 and the average for males was \$1,750, implying that females received only 45.2 percent of the amount received by males on average. Even though the average funding amounts per trainee in occupational training were much smaller than the average amounts per trainee in degree programs, the number of individuals in occupational training was more than 3.5 times the number in degree programs, which produced a total funding amount for occupational training that was nearly twice that for degree programs.

The majority of funding for occupational training came from the WIA program. Females received 50.1 percent of their total funding and males received 63.3 percent of their total funding from WIA. Similar to the degree program service group, occupational training funding saw a larger proportion of the trade-related NAFTA and TAA funds going to males and a larger proportion of TANF funds going to females. Furthermore, males received a total amount of WIA Dislocated Worker funding that was more than twice the amount of that received by females. As with the degree program trainees, the higher percentages of trade-related and dislocated worker funding for males is likely due in part by the proportions of males and females in the manufacturing sector, a sector that typically produces the largest number of dislocated workers. Among male trainees receiving occupational training, 14.1 percent were employed in manufacturing in the last quarter prior to beginning training. This represents the largest share of males receiving occupational training services by industry when considering those who were employed in the quarter prior to the commencement of training. Approximately 31.5 percent of all WIA Dislocated Worker, NAFTA, and TAA funding for males in this training service went to individuals previously employed in manufacturing. In comparison, only 4.3 percent of all females in occupational training were employed in the manufacturing sector in the quarter preceding the start of training.

**Table 5.2. Funding Sources for Occupational Training Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
WIA A	\$367,768	\$720,137	\$174,255	\$130,279	\$99,507	\$1,491,945
WIA DW	\$238,916	\$512,747	\$84,828	\$27,117	\$61,708	\$925,316
WIA Y	\$0	\$0	\$0	\$704	\$0	\$704
TANF FEP	\$311,927	\$233,079	\$169,682	\$86,709	\$72,494	\$873,891
TANF Non-FEP	\$213,626	\$252,803	\$212,320	\$160,498	\$67,723	\$906,970
NAFTA/TAA	\$361,752	\$144,569	\$95,796	\$45	\$23,474	\$625,637
All Others	\$1,880	\$899	\$0	\$0	\$0	\$2,779
Total	\$1,495,868	\$1,864,234	\$736,881	\$405,352	\$324,906	\$4,827,242
<b>Males</b>						
	North	WFS	ML	East	West	State
WIA A	\$323,765	\$787,552	\$158,032	\$149,712	\$99,680	\$1,518,741
WIA DW	\$480,986	\$1,175,777	\$287,421	\$96,162	\$87,334	\$2,127,680
WIA Y	\$0	\$0	\$0	\$0	\$0	\$0
TANF FEP	\$14,045	\$25,352	\$5,267	\$3,439	\$5,455	\$53,558
TANF Non-FEP	\$194,616	\$237,283	\$171,499	\$99,168	\$39,732	\$742,298
NAFTA/TAA	\$141,723	\$306,581	\$840,255	\$9,793	\$19,298	\$1,317,650
All Others	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$1,155,134	\$2,532,545	\$1,462,474	\$358,274	\$251,498	\$5,759,926

Note: WIA A = Workforce Investment Act Adult, DW = Dislocated Worker, Y = Youth, TANF = Temporary Assistance to Needy Families, FEP = Family Employment Plan, NAFTA = North American Free Trade Agreement, TAA = Trade Adjustment Assistance.

## 5.2 The Results

The results for occupational training show a general similarity to the results for degree programs. In nearly every region, the earnings and employment differences for the first few quarters are negative. As with degree program training, this is likely the result of a reduction in labor market participation by individuals who are attending classes as a part of their training activities. Within approximately one year, earnings and employment differences turn positive and exhibit an overall steady increase for the remainder of the four-year observation period. On the whole, occupational training produces consistently strong earnings and employment improvements for both males and females in nearly every region.

While the outcomes for occupational training are generally similar to those for degree programs, there are a few important differences that deserve mention. The first difference involves the time at which trainees begin to exhibit positive earnings and employment improvements. Both male and female degree program trainees saw negative earnings differences for the first six quarters after entering training, then positive earnings differences from the seventh quarter onward. Trainees enrolled in

occupational training services demonstrated positive earnings differences much more rapidly than degree program trainees. Based on statewide results, males in occupational training experienced positive earnings differences in the third quarter, while females showed positive earnings differences in the fourth quarter. Improvements in employment were also more rapid in occupational training as compared to degree programs. Males in degree programs did not show employment improvements over the control group until the seventh quarter, but males in occupational training saw employment improvements in the second quarter. Females also saw positive employment differences faster in occupational training than in degree programs, with positive employment differences first occurring in the third quarter as compared to the fourth quarter. The shorter time period required before negative earnings and employment differences turned positive that was observed in occupational training is largely due to the shorter length of certificate programs and occupation-oriented academic plans as compared to degree programs.

The magnitudes of the earnings and employment effects comprise another main difference between the results for occupational training and degree programs. At the statewide level, the earnings and employment differences for both males and females who received degree program training showed steep, nearly-linear upward trends over time suggesting potentially large improvements in outcomes in the future. Occupational training, on the other hand, tended to produce positive earnings and employment differences sooner in the observation period, but the trends flatten out between the second and third years showing only a slight upward trend by the fourth year. Moreover, the occupational training earnings and employment differences are smaller than those for degree programs, a consequence of the flattening of trends for occupational training outcomes.

The comparisons to degree programs notwithstanding, occupational training service recipients demonstrated large, stable earnings and employment improvements over the four-year period. At the statewide level, females exhibited an average quarterly earnings improvement of \$302 in the fourth year after beginning training, reaching a four-year high of \$321 in the sixteenth quarter. Males showed a larger improvement in earnings as compared to females and saw an average quarterly earnings difference of \$519 in the fourth year.

Regionally, the earnings outcomes followed a similar pattern of an upward trend that flattens out within one to two years with only a couple of exceptions. While the earnings differences for females were strong and positive throughout all of the regions, the outcomes for males were weak and unstable in three regions. The Northern Region was the only case where males in occupational training experienced a four-year sum of earnings differences that was negative. Even though the earnings differences followed the same general pattern as the statewide results, the trend for males in the Northern Region never moved far above zero and eventually fell back toward zero in the fourth year. In the rural Eastern and Western regions, the earnings differences for males began with upward trends, but suffered downturns in the second to third years.

**Table 5.3. Summary of Outcomes for Occupational Training Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	\$2,035	\$2,790	\$2,289	\$1,979	\$2,386	\$2,403
Four-Year Average of Employment Differences	6.5	7.4	6.0	4.0	5.4	6.4
<b>Males</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	−\$113	\$7,815	\$5,847	\$7,819	\$5,013	\$5,396
Four-Year Average of Employment Differences	1.1	6.9	7.8	7.3	7.8	5.7

However, by the fourth year, the earnings differences for trainees appeared to once again demonstrate upward trends, giving an impression of fairly strong, if somewhat variable, results.

Similar to the earnings outcomes, the employment outcomes for those in occupational training show strong positive results. As a statewide average for the fourth year, females showed a 7.7 percentage-point improvement in employment relative to their control group whereas males showed a 6.6 percentage-point improvement. At the regional level, the employment patterns are similar to the earnings patterns. Employment outcomes for females were strong in all regions, but for males the outcomes were weaker and less stable in the Northern, Eastern, and Western regions.

A summary of results for occupational training are found in Table 5.3.<sup>1</sup> The earnings differences in Table 5.3 can be used in conjunction with the average DWS-administered funding amounts to determine if the gains from occupational training outweigh the costs. In every region, female trainees exhibited four-year sums of earnings differences that were larger than the average funding amounts. For males, the four-year sums of earnings differences were larger than the average funding amounts in all of the regions except for the Northern Region. Statewide, the total of the earnings differences over four years for females in occupational training is larger than the total amount of funds expended on these trainees by \$9,828,655. For males across the state, the four-year total of earnings differences for occupational training is larger than the total funding amount by \$11,998,310. Thus, occupational training leads to earnings improvements that are significantly larger than the total amount of federal funding dollars spent on these services.

<sup>1</sup>Because the results can exhibit a time-dependent trend, the summary outcomes should be examined in conjunction with the trends represented graphically in the subsequent figures.

Figure 5.1. Occupational Training: Earnings Outcomes for Females

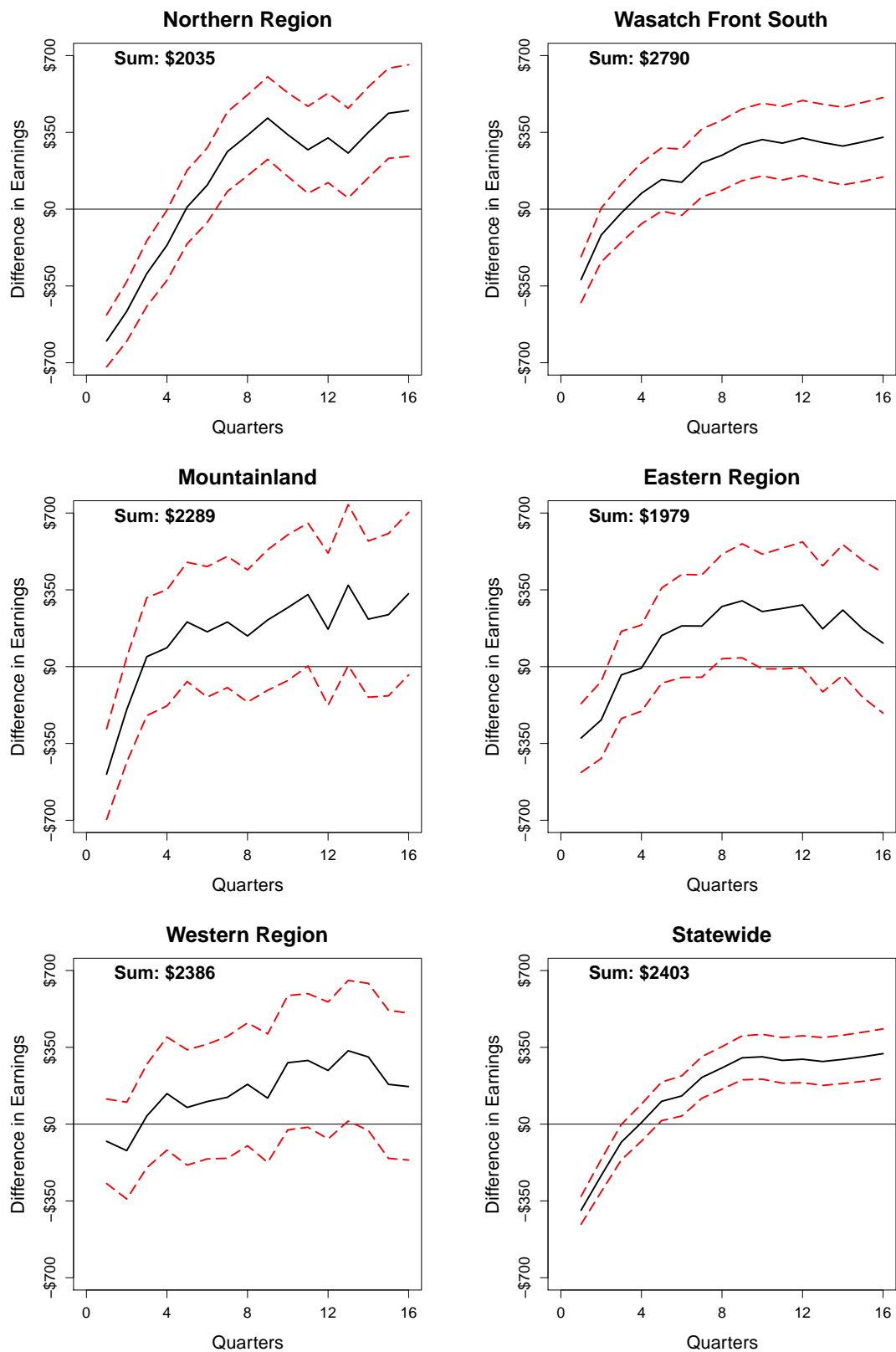


Figure 5.2. Occupational Training: Earnings Outcomes for Males

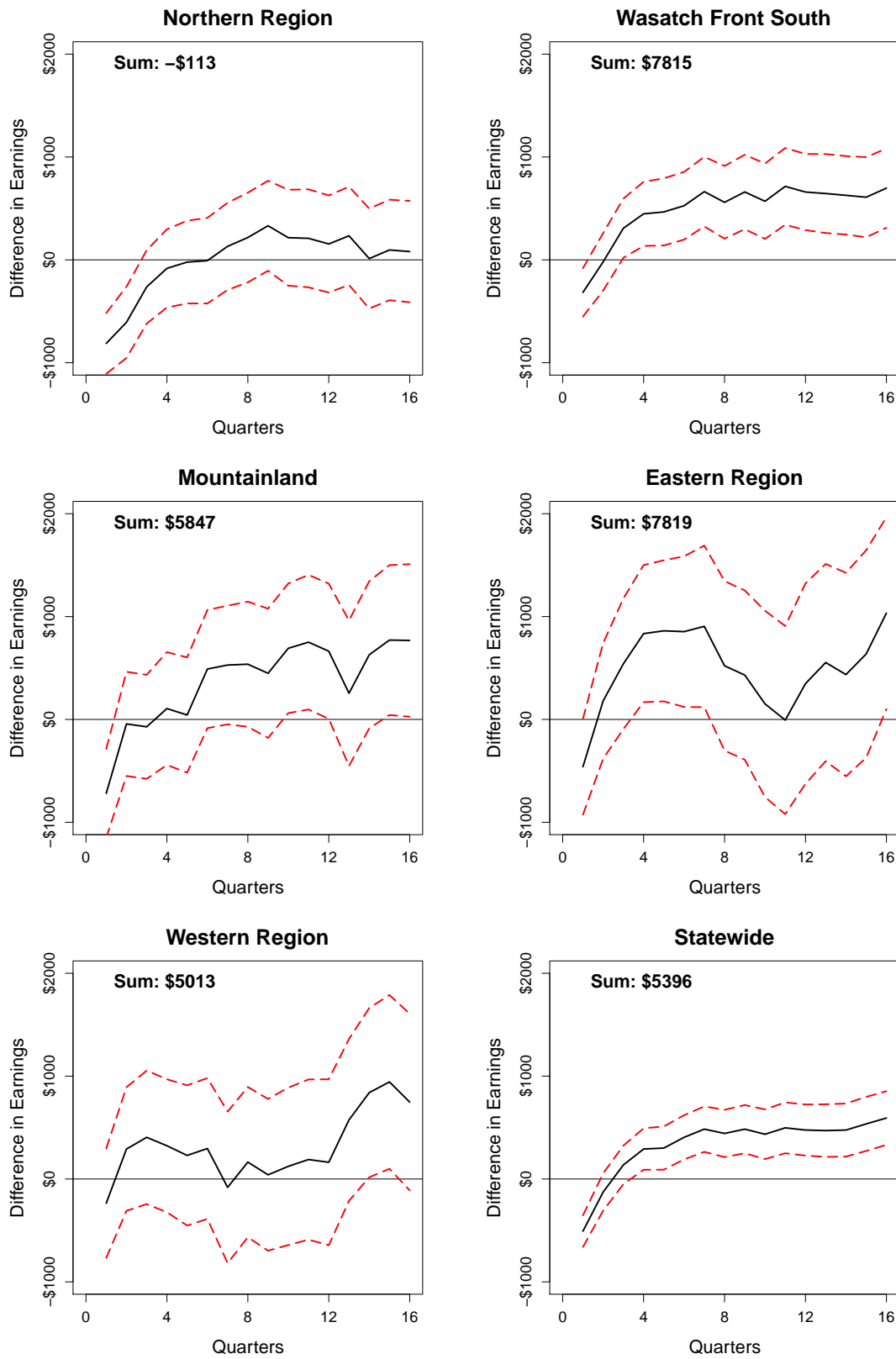


Figure 5.3. Occupational Training: Employment Outcomes for Females

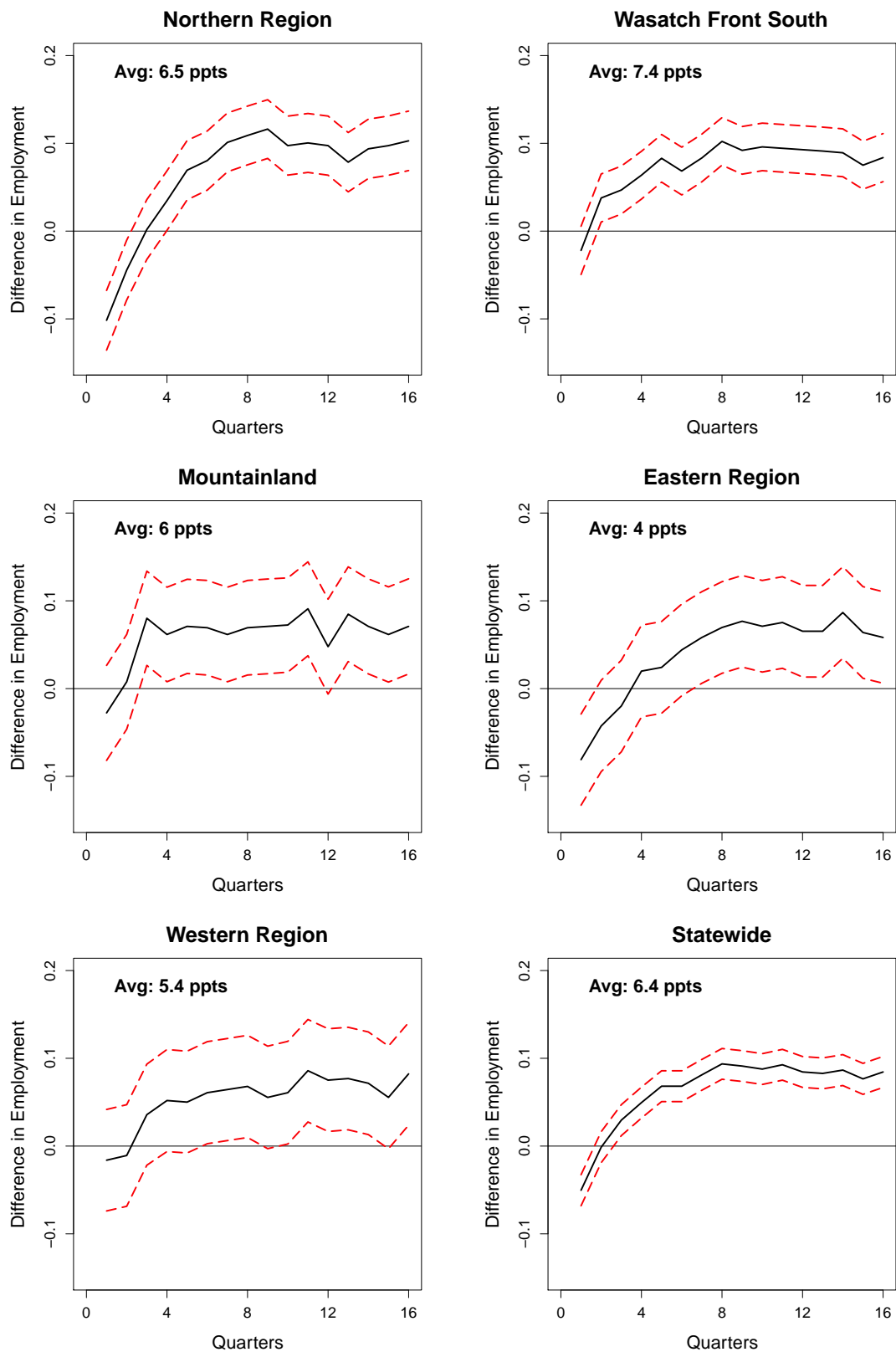
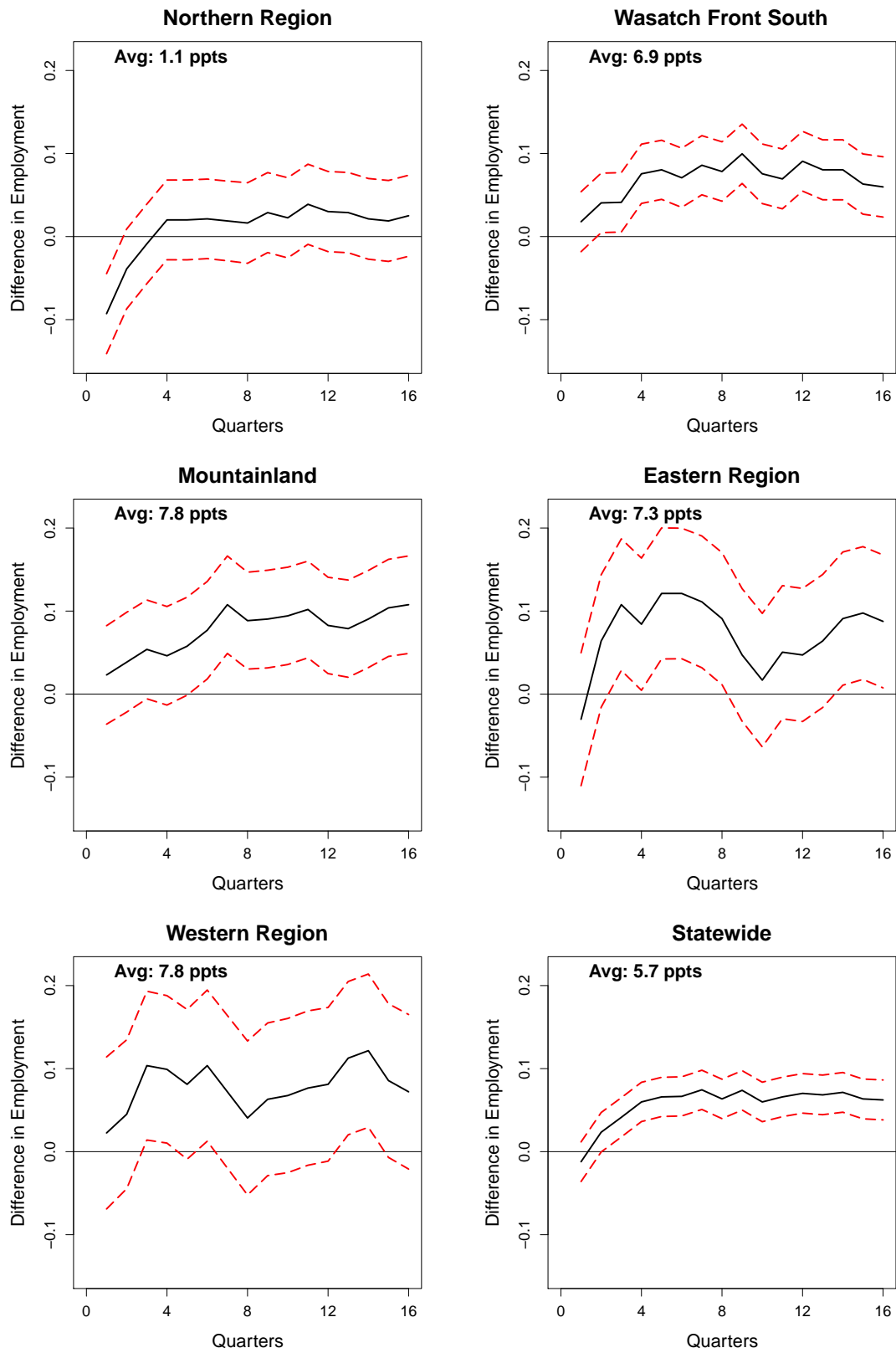


Figure 5.4. Occupational Training: Employment Outcomes for Males



# Chapter 6

## GEDs and High School Diplomas

### 6.1 Characteristics of the Trainees

The goal of individuals enrolled in this training service is passing the General Educational Development (GED) test or obtaining a high school diploma. DWS classifies the GED and high school diploma (GED/HS diploma) training service under the basic education employment plan objective and it is grouped together with the Basic Skills Remediation service and the English as a Second Language (ESL) service.

Acquiring a GED or high school diploma has become an increasingly important educational goal as employers generally have shown less interest in hiring individuals who have neither a GED nor a high school diploma. As evidence, individuals with a level of education below a high school diploma consistently have the lowest earnings and the highest rate of unemployment across the nation.<sup>1</sup> Furthermore, obtaining a GED or a high school diploma is a prerequisite for nearly all colleges and universities. The value of a GED certificate as compared to a high school diploma has been a topic of considerable debate and it would have been of considerable interest to analyze the outcomes for trainees pursuing a GED separately from those pursuing a high school diploma. However, these two educational goals are combined under one service name in the data and trainees could not be separated into two groups along these lines.

A total of 6,107 individuals were enrolled in the GED/HS Diploma training service with DWS between the first quarter of 2002 to the second quarter of 2006. Of these individuals, only 4,453 were included in the analysis of the GED/HS Diploma training service. Due to an insufficient number of suitable matches in the control group, approximately 27.1 percent of the trainees could not be matched and were excluded from the analysis.<sup>2</sup> The proportions of males and females excluded on this basis were

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<sup>1</sup>For unemployment rates by level of education, see the Bureau of Labor Statistics's (BLS) *The Employment Situation* for any month. For statistics on earnings by level of education, see the BLS's Current Population Survey data.

<sup>2</sup>See Chapter 2, p. 18 for a discussion of the matching technique used in the analysis of the GED/HS Diploma training service and the reason for the exclusion of some individuals.

**Table 6.1. Counts for GED/HS Diploma Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
GEDs and HS Diplomas	978	1,785	211	281	302	3,557
<b>Males</b>						
	North	WFS	ML	East	West	State
GEDs and HS Diplomas	196	453	50	114	83	896

roughly similar with 24.7 percent of all males excluded and 27.7 percent of all females excluded. Approximately 80 percent of all GED and high school trainees were female and 20 percent were male.

The total funding administered by DWS for those pursuing a GED or high school diploma is small in comparison with other training services. The 4,453 trainees pursuing a GED or high school diploma that were analyzed in this study received a total of \$227,665, with males receiving an average of \$35 and females receiving an average of \$55. These funds are intended primarily for the payment of tuition and fees, which includes the fees associated with taking the GED test, but they might have also been used to pay for school supplies and other items deemed necessary in assisting trainees to complete the service. The Utah State Office of Education is responsible for the majority of the costs associated with administering the adult GED and high school diploma programs.

For females, the majority of their DWS-administered funding came from TANF, which accounted for 58.5 percent of all female GED/HS Diploma funding. Males received most of their funding from the WIA program, which amounted to 63.6 percent of all male GED/HS Diploma funding.

## 6.2 The Results

Given the widespread view that those with a high school education generally earn more than those with less than a high school education, along with the statistics that support this view, the results may strike some as surprising. At the statewide level, the earnings differences for both males and females begin with negative values, which is a general feature of the other education-related training services. However, unlike degree programs or occupational training, the earnings differences trend upward only slightly and effectively come to rest at zero. In the fourth year after beginning training, female GED/HS Diploma service recipients exhibited an average quarterly earnings difference of  $-\$40$  and males showed a  $-\$53$  average quarterly earnings difference. In light of the variability of the data in the fourth year, the conclusion is that the GED/HS Diploma training service has no earnings effect on either males or

**Table 6.2. Funding Sources for GED/HS Diploma Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
WIA A	\$2,130	\$52,976	\$2,935	\$55	\$55	\$58,151
WIA DW	\$330	\$10,633	\$115	\$160	\$0	\$11,238
TANF FEP	\$52,661	\$32,805	\$10,281	\$1,728	\$7,359	\$104,834
TANF Non-FEP	\$1,925	\$7,570	\$112	\$354	\$0	\$9,962
NAFTA/TAA	\$567	\$11,271	\$55	\$0	\$0	\$11,893
Total	\$57,614	\$115,256	\$13,498	\$2,297	\$7,414	\$196,078
<b>Males</b>						
	North	WFS	ML	East	West	State
WIA A	\$0	\$6,282	\$50	\$55	\$0	\$6,387
WIA DW	\$640	\$11,051	\$90	\$0	\$1,920	\$13,701
TANF FEP	\$2,957	\$0	\$55	\$55	\$0	\$3,067
TANF Non-FEP	\$2,775	\$3,623	\$165	\$368	\$0	\$6,930
NAFTA/TAA	\$0	\$1,502	\$0	\$0	\$0	\$1,502
Total	\$6,372	\$22,458	\$360	\$478	\$1,920	\$31,587

Note: WIA A = Workforce Investment Act Adult, DW = Dislocated Worker, TANF = Temporary Assistance to Needy Families, FEP = Family Employment Plan, NAFTA = North American Free Trade Agreement, TAA = Trade Adjustment Assistance.

females at the statewide level.

The regional results show the same general tendency of the earnings differences moving toward zero. The one exception to the general pattern is the set of results for females in the Eastern Region. Although the earnings differences hover around zero for the first two years after the start of training, they show a strong upward trend during the third and fourth years. In the fourth year, female GED/HS Diploma trainees in the Eastern Region experienced an average quarterly earnings improvement of \$400 relative to their control group. The results for females in the Eastern Region are unique in demonstrating strong positive earnings differences and the explanation appears to lie with the completion rate.<sup>3</sup> Female GED/HS Diploma trainees in the Eastern Region had the highest completion rate among the five regions for this particular training service.

While GED/HS Diploma trainees saw little impact on their earnings from entering into this training service, they did experience significant positive employment effect. At the statewide level, the employment differences were negative in the first quarters, but by the third quarter the employment differences were significant positive numbers for both males and females. From the beginning of the second year onward, the employment differences are surprisingly steady for both males and females. In the fourth year, females showed a 6.3 average percentage-point improvement in em-

<sup>3</sup>See Chapter 10 for a discussion of statewide outcomes for service completers and non-completers.

**Table 6.3. Summary of Outcomes for GED/HS Diploma Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	−\$2,192	−\$1,178	−\$1,972	\$1,904	−\$3,298	−\$1,440
Four-Year Average of Employment Differences	4.0	5.9	7.3	8.7	2.4	5.4
<b>Males</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	\$261	−\$952	−\$3,318	−\$8,488	\$456	−\$1,647
Four-Year Average of Employment Differences	7.2	5.6	3.1	2.6	9.7	5.8

ployment over their control group and males showed a 7.5 average percentage-point improvement relative to their control group.

At the regional level, the Northern and Wasatch Front South Regions demonstrated perhaps the strongest and steadiest employment results in the state. In contrast, the employment outcomes for the Mountainland, Eastern, and Western Regions exhibited more fluctuation in general. Of all of the regions, the outcomes for females in the Western Region were the only ones that seemed to show little long-term impact of GED/HS Diploma training on employment. By the fourth year, the employment differences for females in the Western Region are essentially zero.

The results are summarized as the four-year sum of differences in earnings and the four-year average percentage-point difference in employment in Table 6.3.<sup>4</sup> Overall, there is little to no earnings effect for those entered into the GED/HS Diploma training service. Even though the average costs in terms of federal funding dollars are small for trainees, the negative four-year sum of earnings differences for both males and females implies that earnings improvements do not offset these costs. However, the employment effect of GED/HS Diploma training is particularly strong and there is considerable social value in having a greater number of individuals employed, even if they are not earning more than their corresponding control groups on average. Moreover, individuals who acquire GEDs or high school diplomas have an expanded range of educational and job-related training opportunities, where the completion of these additional training services can lead to significant increases in expected earnings.

<sup>4</sup>Because the results can exhibit a time-dependent trend, the summary outcomes should be examined in conjunction with the trends represented graphically in the subsequent figures.

Figure 6.1. GED/HS Diploma: Earnings Outcomes for Females

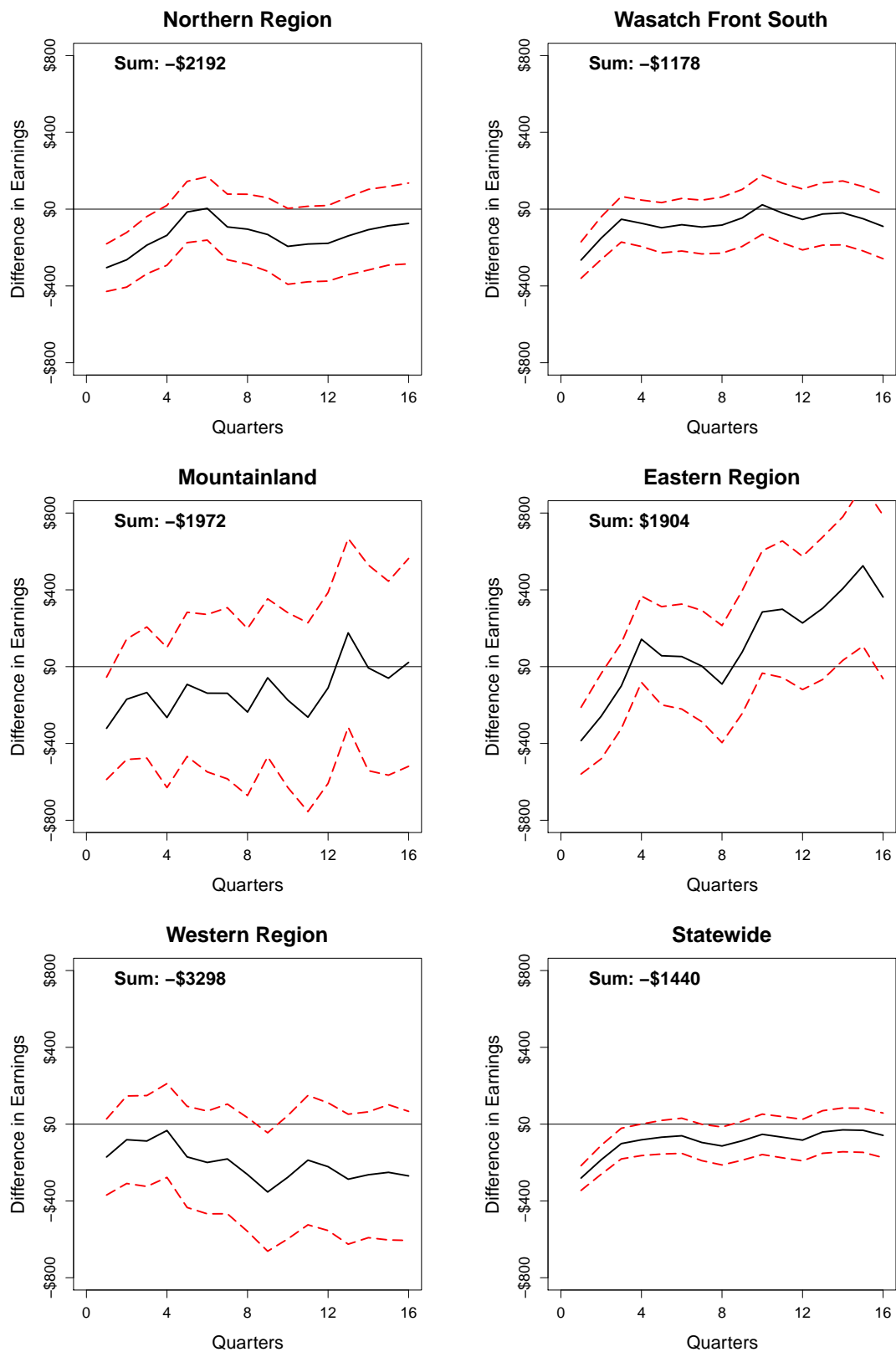


Figure 6.2. GED/HS Diploma: Earnings Outcomes for Males

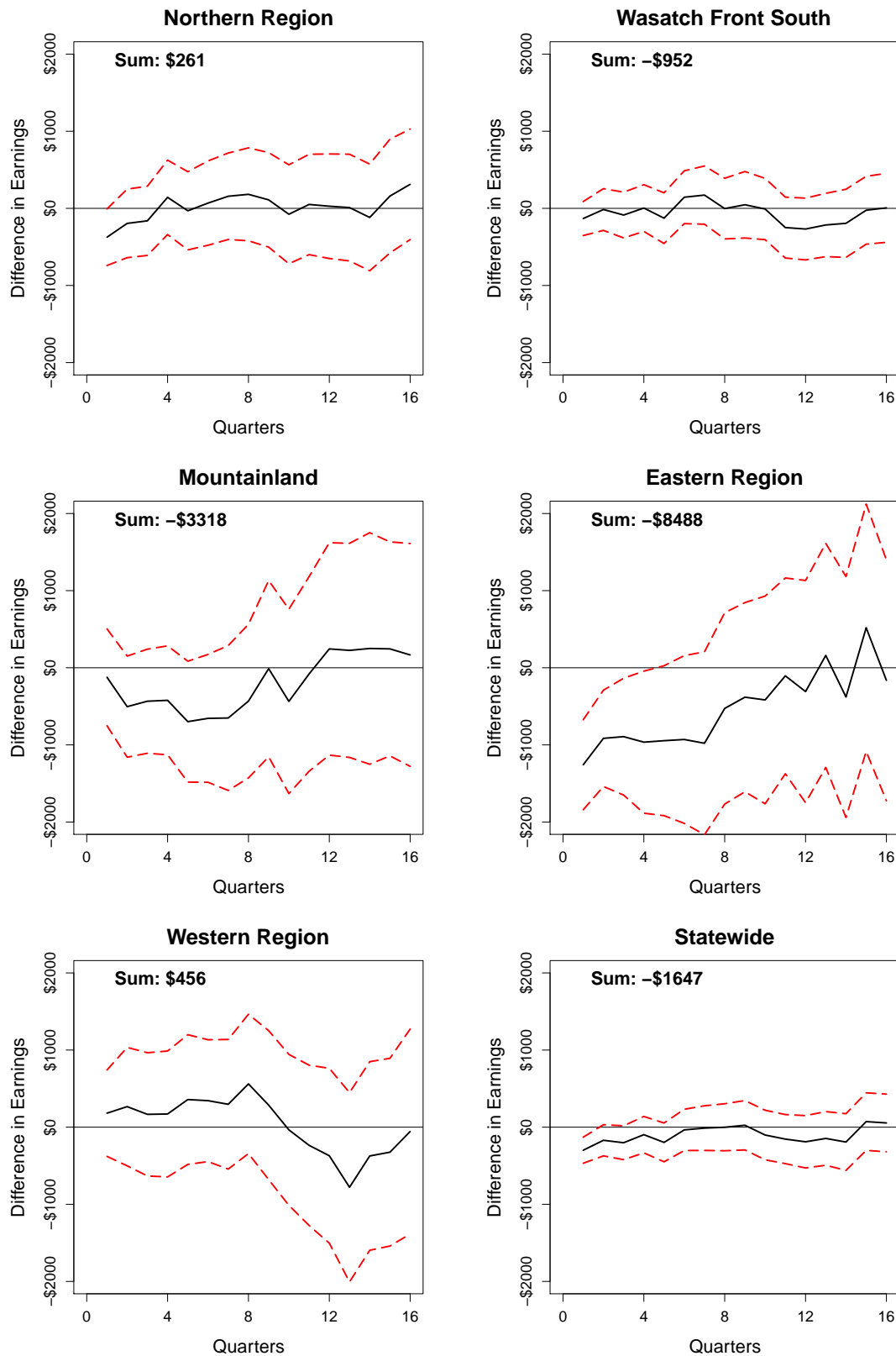


Figure 6.3. GED/HS Diploma: Employment Outcomes for Females

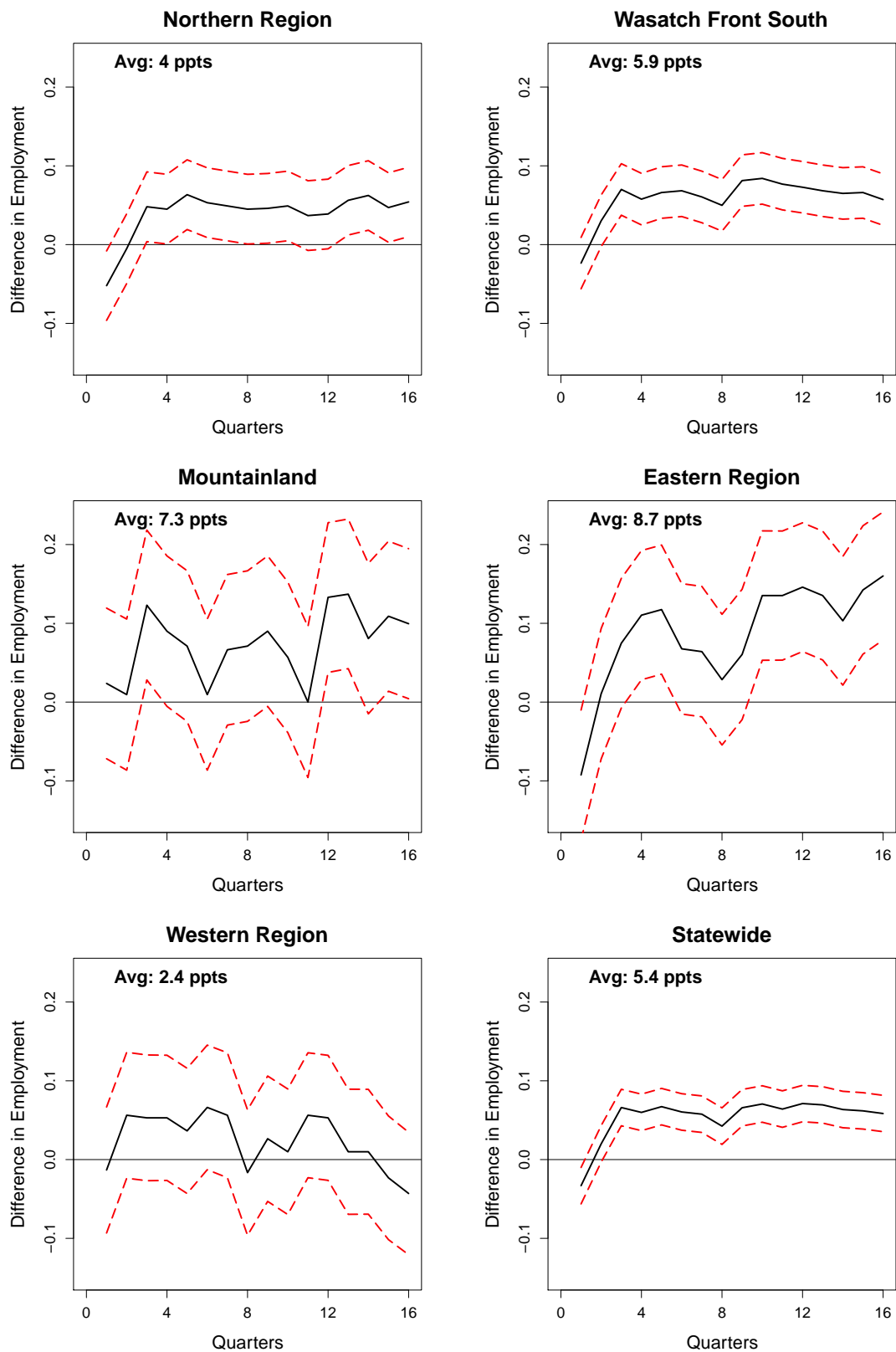
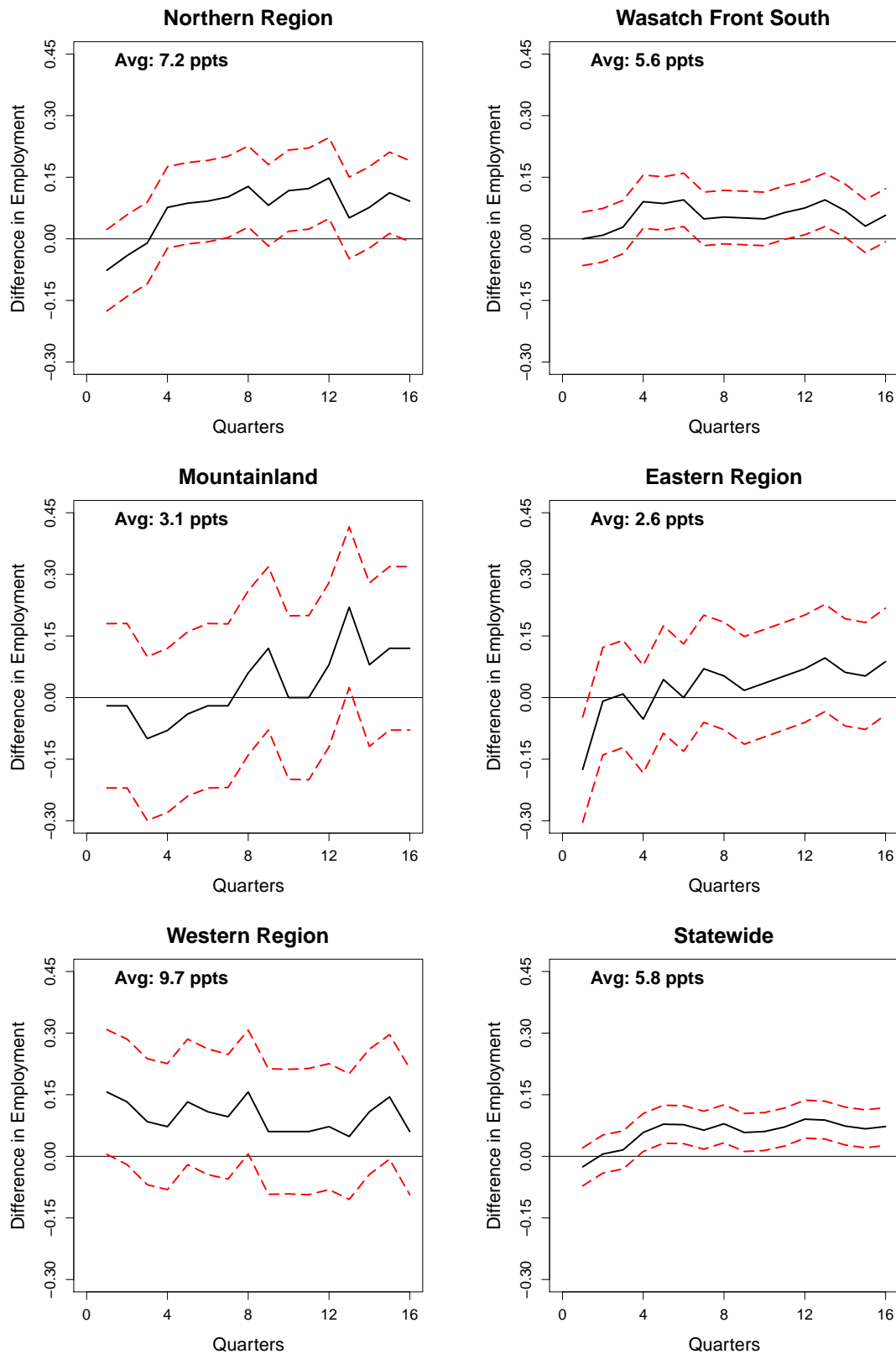


Figure 6.4. GED/HS Diploma: Employment Outcomes for Males



# Chapter 7

## Paid Internships

### 7.1 Characteristics of the Trainees

Paid internships are one of three types of DWS training activities that are not associated with classroom learning, but instead focus on gaining labor market skills through practical application or workshops. Generally speaking, paid internships include activities where an individual is engaged in work-type activities that allow the individual to acquire marketable skills and earn a wage while at the same time productively contributing to the business activity of the employer providing the internship. Individuals obtain paid internship opportunities either by independently connecting with an employer, or, as is more often the case, by working with DWS to establish a connection with an employer that has a preestablished arrangement with DWS. Most paid internships include a subsidy paid by DWS to the employer to offset the cost of training the intern.

For the purposes of this study, paid internships refers to a group of four training services that includes apprenticeships, on-the-job training, public paid internships and private paid internships. Individuals falling within any of these four training services were grouped together for the analysis. While each of the four training services is distinct and counted separately for administrative and programmatic purposes, in the context of analyzing training as it affects labor market outcomes, the four services are essentially the same and are analyzed in aggregate.

For an apprenticeship to be approved as a training service, the apprenticeship program must meet the criteria established by the Bureau of Apprenticeship and Training and only the on-the-job training component is counted as a training activity. For those enrolled in a family employment plan (FEP), this service may include some basic skill remediation if it is limited in duration and is necessary or a regular part of the training program. On-the-job training is a paid worksite learning activity and will vary in length depending on the time needed to learn the necessary skills. Generally, on-the-job training does not extend past a six-month period of time and requires that the individual be employed with the subsidized employer full time. The

**Table 7.1. Counts for Paid Internship Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Apprenticeships	4	10	2	5	3	24
On-the-Job Training	38	90	77	27	41	273
Paid Internships	5	40	5	17	7	74
Public Paid Internships	35	104	16	27	8	190
Total	82	244	100	76	59	561
<b>Males</b>						
	North	WFS	ML	East	West	State
Apprenticeships	2	16	1	0	0	19
On-the-Job Training	26	94	133	22	39	314
Paid Internships	10	50	2	8	2	72
Public Paid Internships	65	246	7	37	11	366
Total	103	406	143	67	52	771

expectation for those in the on-the-job training service is that the individuals' employment continues past the training period, assuming that the individuals successfully complete training. Public and private internships are similar to on-the-job training programs, except that the employment is usually a part-time position with either a public or private sector employer. There is not necessarily an assumption that the employer will employ the individual permanently or have a permanent position available for the intern to compete for once the internship is complete. The individual, however, still benefits from the internship by gaining employable skills and a worksite experience that may be used to gain a permanent position with another employer.

Over the observed time period a total of 1,332 individuals participated in the paid internship training service, 57.9 percent of whom were male. Paid internship participants constituted only 4.1 percent of all training service recipients analyzed in this study. For all regions considered in this study, apprenticeships and private paid internships were the least common form of paid internship observed. On-the-job training was the most commonly observed form of paid internship for females across the regions, with the exception of the Wasatch Front South region which was dominated by public paid internships. For males, the most common forms of paid internships were on-the-job training in the Mountainland and Western regions and public paid internships in the Eastern, Wasatch Front South, and Northern regions.

Funding patterns were quite similar to those observed in previously discussed training services. Males garnered a higher percentage of the overall funding for paid internships, approximately 63 percent. Males in the Mountainland Region received nearly an equivalent amount of funding to that which was received by all females in paid internships across the state during the observed period of time (\$553,504

**Table 7.2. Funding Sources for Paid Internship Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
WIA A	\$18,924	\$75,176	\$75,716	\$59,652	\$67,151	\$296,619
WIA DW	\$23,669	\$35,740	\$20,908	\$0	\$7,287	\$87,605
WIA Y	\$0	\$0	\$0	\$225	\$0	\$225
TANF FEP	\$5,400	\$9,467	\$44,265	\$0	\$6,057	\$65,189
TANF Non-FEP	\$10,855	\$7,675	\$21,197	\$19,496	\$17,069	\$76,291
NAFTA/Trade	\$3,243	\$2,223	\$18,735	\$0	\$1,315	\$25,516
All Others	\$4,279	\$1,920	\$0	\$0	\$0	\$6,199
Total	\$66,372	\$132,202	\$180,820	\$79,373	\$98,878	\$557,645
<b>Males</b>						
	North	WFS	ML	East	West	State
WIA A	\$21,947	\$87,641	\$47,014	\$21,448	\$50,359	\$228,410
WIA DW	\$13,498	\$65,277	\$103,844	\$9,722	\$41,804	\$234,145
WIA Y	\$0	\$0	\$0	\$0	\$0	\$0
TANF FEP	\$0	\$72	\$16,338	\$0	\$0	\$16,410
TANF Non-FEP	\$13,345	\$0	\$46,103	\$13,719	\$14,670	\$87,837
NAFTA/TAA	\$8,736	\$16,122	\$340,206	\$0	\$22,570	\$387,634
All Others	\$1,282	\$0	\$0	\$0	\$0	\$1,282
Total	\$58,808	\$169,112	\$553,504	\$44,889	\$129,403	\$955,717

Note: WIA A = Workforce Investment Act Adult, DW = Dislocated Worker, Y = Youth, TANF = Temporary Assistance to Needy Families, FEP = Family Employment Plan, NAFTA = North American Free Trade Agreement, TAA = Trade Adjustment Assistance.

and \$557,645, respectively). WIA Adult was the primary funding source for paid internships across the state, but for males the largest source of funding was the NAFTA/TAA program.

## 7.2 The Results

The differences in labor market outcomes for individuals who participated in paid internships were positive in comparison to the control group for the four years of observations. The average sum of earnings differences for females and males were \$3,294 and \$4,919, respectively. For both genders, the earnings differences were the second highest of all the training programs analyzed. The average employment differences were also strongly positive, with males experiencing the highest average percentage-point difference of all the training programs at 7.2 percentage points. The most significant and interesting results when comparing the summary outcomes over all the observed regions were the large positive earnings and employment differences for both the males and females in the Mountainland Region. The four-year sum of earn-

**Table 7.3. Summary of Outcomes for Paid Internship Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	\$3,480	−\$1,101	\$11,321	\$6,698	\$3,221	\$3,294
Four-Year Average of Employment Differences	9.4	0.0	14.6	5.5	5.1	5.2
<b>Males</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	\$2,445	−\$1,510	\$27,770	\$345	\$3,062	\$4,919
Four-Year Average of Employment Differences	7.9	1.6	20.9	6.0	13.6	7.2

ings difference for males in the Mountainland Region was 70 percent higher than the second highest region (the Eastern Region). The earnings differences for females in the Mountainland Region were nine times higher than the next highest region and about 2.5 times higher than the male earnings differences in the same region. Well-established relationships between DWS and private sector employers in the region may explain the impressive results in Mountainland. Employment differences in the Mountainland Region were notable as well: For both males and females, the average percentage-point differences were much higher in comparison to all of the other regions for all of the other training programs.

Turning to the statewide earnings results, both female and male earnings differences were consistently greater than zero throughout the observation period, although in some quarters this positive difference was small in measure. For both groups, the trend for earnings differences tended toward zero, indicating that the positive effects realized by individuals in the training group would not likely be sustained in the longer run. The peak quarter for females, which is estimated at \$373, occurs early in the period of observation, the fourth quarter. For males the peak quarter is the fourteenth, where the difference in earnings is \$548. Due to the peak earnings difference occurring in the fourth year, a positive earnings difference for males in the fifth year may be possible. For females, however, this is unlikely, especially in consideration of the lower confidence intervals for the female earnings differences, which fall below zero after the fourth quarter and remain negative thereafter.

Regional comparisons for female earnings differences show some notable variation. As previously stated, females in the Mountainland Region exhibit notable earnings differences that trend significantly above zero across the complete observation period, although fluctuations from one quarter to another are present. In contrast, earnings differences for females in the Wasatch Front South Region showed a fairly flat trend

that only in the fourth year deviate from that trend, moving below zero. The other urban region, the Northern Region, showed an essentially flat trend overall, although some positive earnings differences were realized in the first year. The Western Region females exhibited a similar trend to those in the Northern Region, while the Eastern Region showed slightly more promising results that could possibly extend past the fourth year, assuming the trends hold in the longer run. For males across the regions, less variation was observed. All regions exhibited a roughly flat trend throughout the four-year period, with all regions except the Wasatch Front South showing a two to four quarter downward dip in the final quarters. With the exception of the Mountainland Region, the prediction would be that only very small earnings differences would occur over the long run.

The statewide employment percentage-point differences for females in paid internships exhibit a trend that is consistent in being significantly different from zero, although over the four years trends downward slightly. A reasonable prediction may be that positive differences remain for an additional one to two years, although the confidence intervals may bring the consistency in the pattern into question over the longer run. Males, however, exhibit no downward trend. All estimates of employment differences over the 16 quarters were within 2.9 percentage points of the 7.2 percentage-point average, indicating a fairly strong and steady trend that would reasonably be expected to continue beyond the four years under examination.

Comparisons of employment differences between males and females across regions present interesting contrasts. In particular, while the Wasatch Front South, Mountainland, and Western regions all show similar four-year trends for males and females, the other two regions show notable differences in their temporal patterns. Specifically, females in the Northern Region show a downward trend in employment differences in the latter half of the observation period, where their male counterparts show a slightly positive trend in the last quarters. In the Eastern Region, however, the gender results are the opposite. Males actually end the four years with essentially no difference in employment outcomes between the treatment and control groups, where females show a very slight, positive trend.

Figure 7.1. Paid Internships: Earnings Outcomes for Females

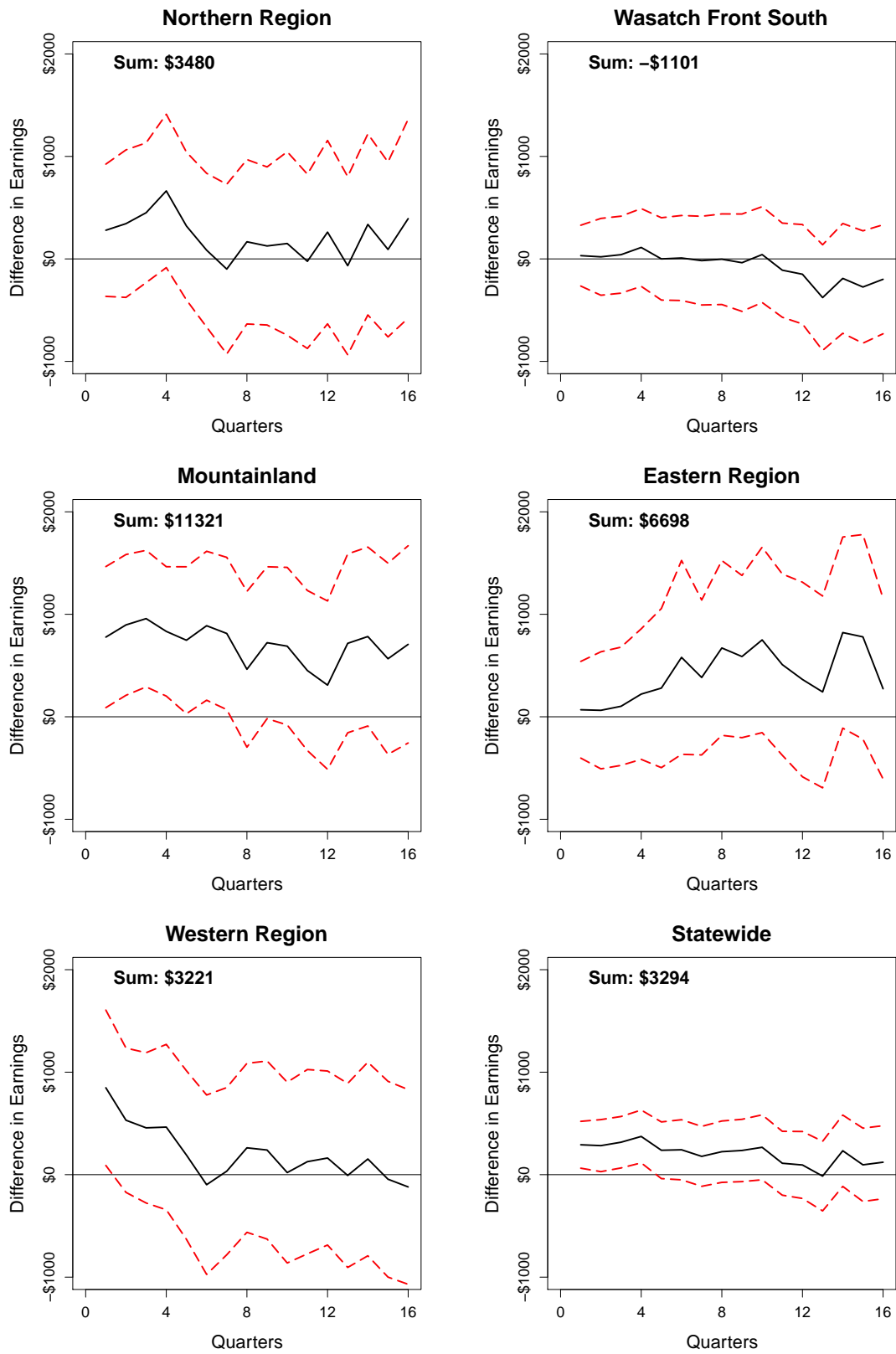


Figure 7.2. Paid Internships: Earnings Outcomes for Males

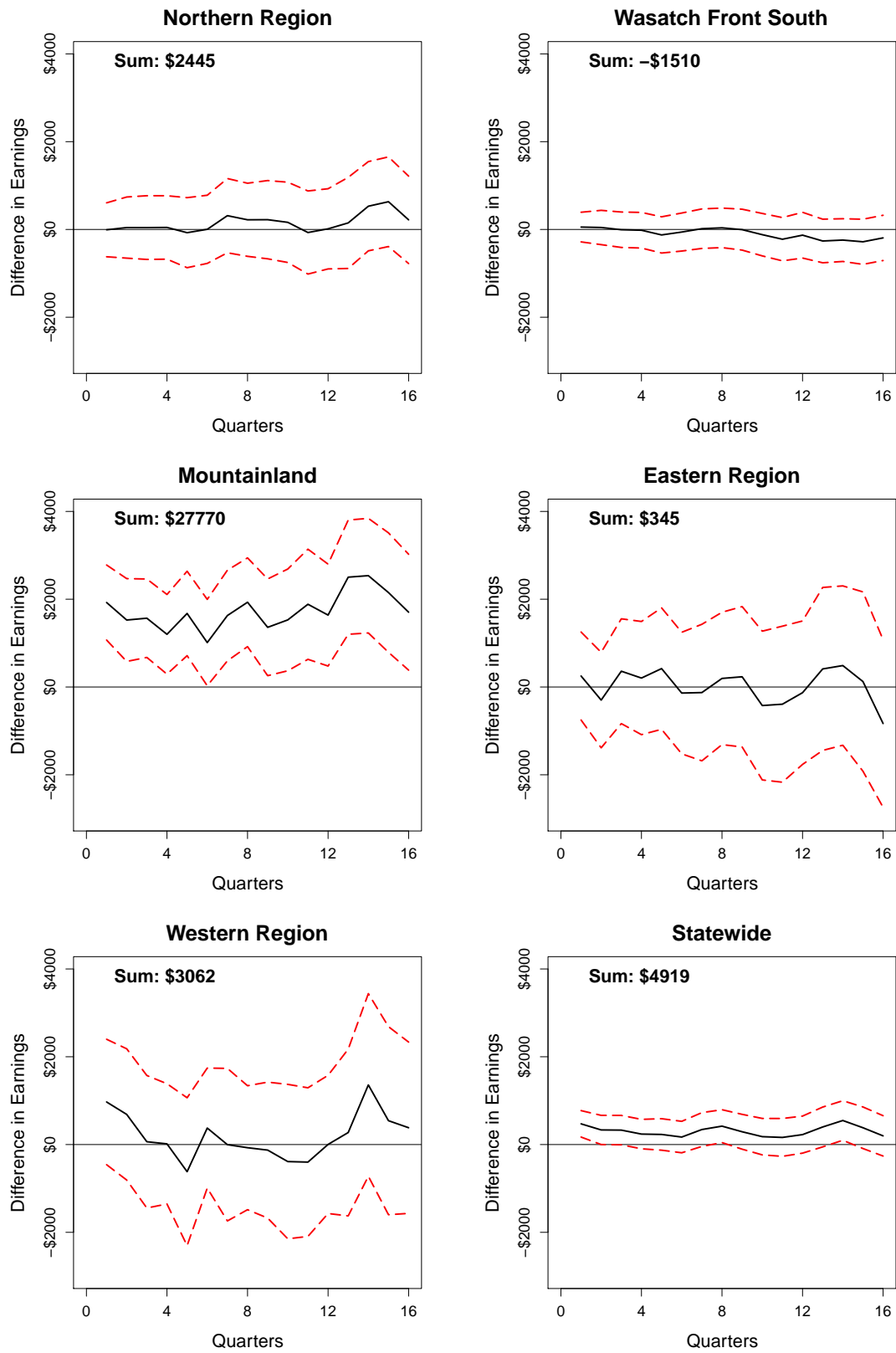


Figure 7.3. Paid Internships: Employment Outcomes for Females

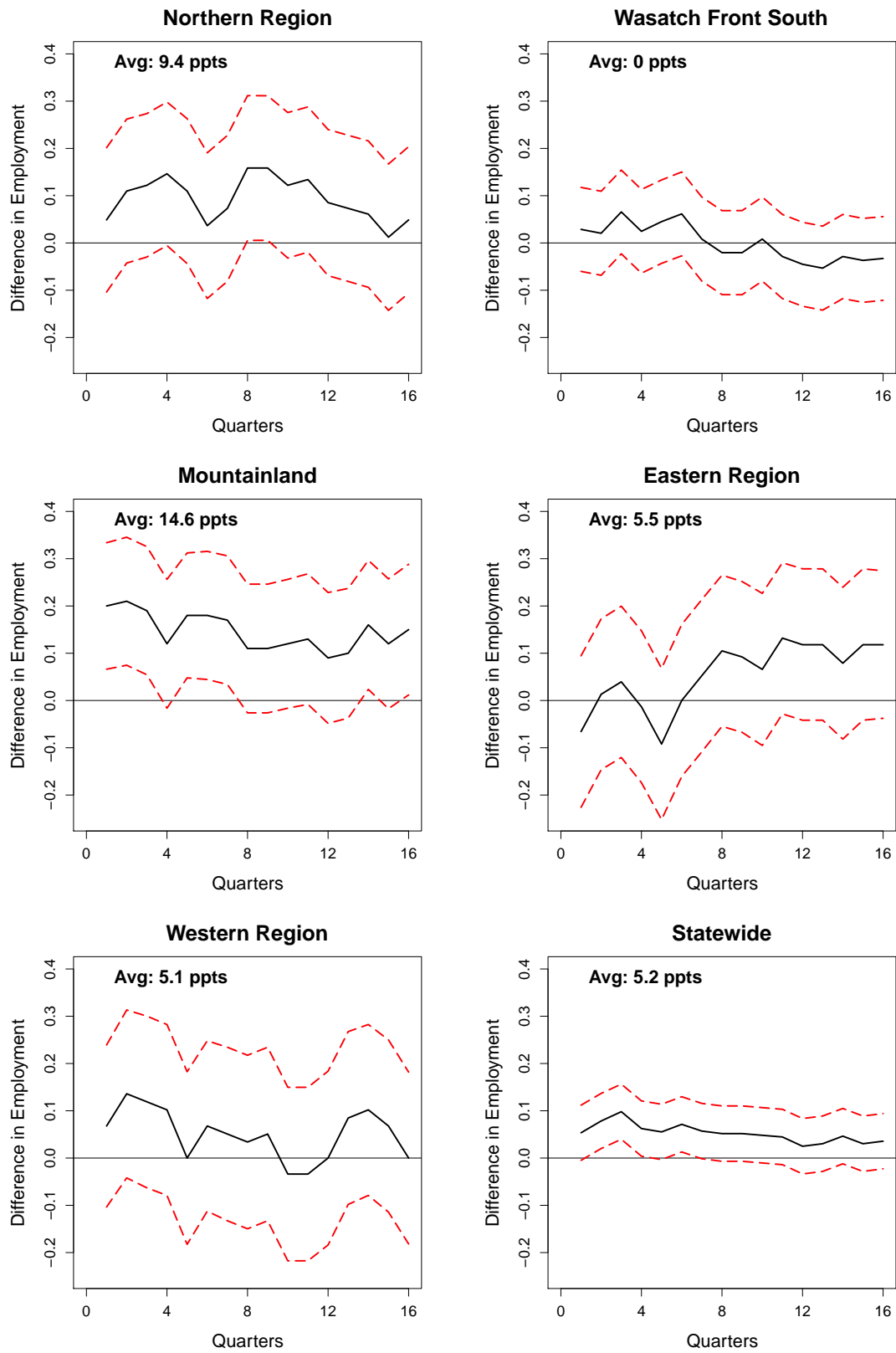
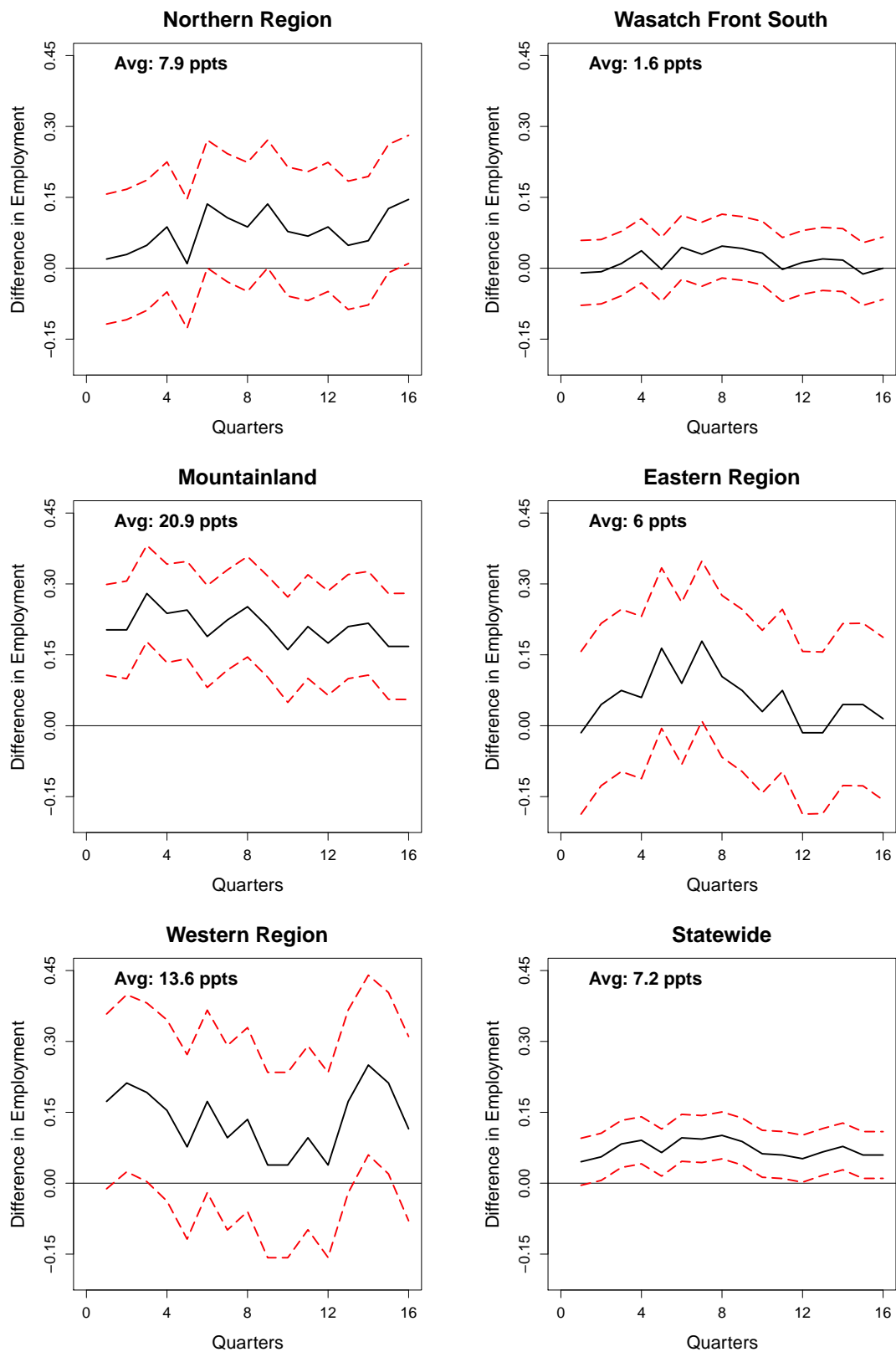


Figure 7.4. Paid Internships: Employment Outcomes for Males



# Chapter 8

## Unpaid Internships

### 8.1 Characteristics of the Trainees

According to DWS policy, the goal of an unpaid internship is to train an individual in an occupation, thereby allowing them to gain skills similar to those that would be taught in a vocational classroom setting. In some cases, when an individual demonstrates a need for the development of job-readiness skills, the scope of an unpaid internship may include training to address the development of professional work habits. However, training for proper work habits and other soft skills cannot be the primary purpose of the internship. An unpaid internship can be completed with either a public or private employer and the service qualifies as an allowable activity for participation in TANF FEP, food stamps, and general assistance programs during the period studied in this report.

Unpaid internships accounted for 21.4 percent of the individuals assigned to training that were examined in this report. Much like the paid internships, the gender distribution was fairly even, with females comprising 54 percent of the individuals who received this training service. For males, unpaid internships were the second-most common training service next to occupational training. The distribution of unpaid internships across regions closely followed the general population distribution for the state, with over half in the Wasatch Front South Region. The Mountainland Region exhibited the largest female to male ratio, measuring two-to-one. In Table 8.1, the number of trainees assigned to unpaid internships are divided into unpaid internships and public unpaid internships. These two categories would seem to suggest that those listed under sub-category of unpaid internships are working for private employers, but this is not the case. An examination of the companies to which unpaid internship trainees were assigned revealed that the public/private distinction was not carefully maintained by those managing the cases of trainees. While trainees were separated into these two categories in Table 8.1 for the purpose of precisely stating which individuals were included in this particular job training service group, this separation cannot be used to infer the numbers of private and public unpaid internships.

**Table 8.1. Counts for Unpaid Internship Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Unpaid Internship	567	1,088	234	67	109	2,065
Public Unpaid Internship	452	883	175	85	92	1,687
Total	1,019	1,971	409	152	201	3,752
<b>Males</b>						
	North	WFS	ML	East	West	State
Unpaid Internship	254	773	96	54	35	1,212
Public Unpaid Internship	505	1,161	106	105	97	1,974
Total	759	1,934	202	159	132	3,186

Because hours spent working in an unpaid internship count toward participation requirements to receive certain social assistance benefits, a high number of individuals who participated in unpaid internships were also receiving food stamps and/or TANF funds. In total, approximately 31.8 percent of the unpaid internship individuals received TANF funds in the same quarter that their internship began, and over 89.9 percent received food stamps in that same quarter. Given the arguably strong relationship between these internships, where the participant receives no monetary compensation directly tied to the amount of work they perform, and the social assistance programs that require a participation element for qualification, it is logical to surmise that motivations may manifest themselves differently for unpaid internships than for other training programs, such as occupational training or paid internships, that have a more directly perceivable labor market outcome for trainees. Completion percentages support this idea.<sup>1</sup>

**Table 8.2. Unpaid Internships Trainees Receiving Social Assistance**

Gender	Unpaid Internships	TANF Recipients	Food Stamps Recipients
Female	3,752	1,794	3,403
Male	3,186	413	2,764

## 8.2 The Results

Overall, statewide results show negative sums of differences in earnings for both males (-\$3,583) and females (-\$2,906) who entered into unpaid internships as compared to

<sup>1</sup>See Chapter 10 for completion percentages and outcomes for completer and non-completers by training service groups.

**Table 8.3. Summary of Outcomes for Unpaid Internship Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	−\$2,339	−\$2,940	−\$7,323	\$1,762	\$15	−\$2,906
Four-Year Average of Employment Differences	4.7	2.0	−1.5	8.0	1.7	2.6
<b>Males</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	−\$827	−\$4,799	−\$6,853	−\$2,428	\$2,011	−\$3,583
Four-Year Average of Employment Differences	7.8	2.0	−2.1	9.7	7.8	3.8

their matched control group counterparts. These results suggest that, at best, unpaid internships have no effect on earnings and could perhaps have a negative influence. Examination of the quarterly estimates of the earnings differences show that the negative trend is a persistent phenomenon for males and females over the four years of data. The consistency of the negative results over time gives credence to the conclusion that unpaid internships have no positive effect on the earnings of those who participate in this activity. One possible explanation for these results is that, while the effectiveness of job training is being measured in terms of labor market outcomes, actively seeking employment or attempting to raise one's wages may not be among the goals of individuals participating in unpaid internship services. Furthermore, the outcomes for any training service will depend upon the percentage of individuals who complete the training and unpaid internships have a very low completion rate.

Significant variation exists in the earnings outcomes between the regions, with a pattern that shows a fairly clear division between the rural and urban regions. The pattern is distinct in the female results, with the Eastern and Western regions being the only two with net positive results over the four years of observation. The Northern, Mountainland, and Wasatch Front South regions all consistently showed negative results over the 16 quarters estimated. The Eastern Region was alone in exhibiting an upward trend in earnings differences, but the trend is disrupted in the fourth year, bringing into question the possibility of positive difference extending into the longer term. For males, only in the Western Region can the conclusion be drawn that unpaid internships influence positive earnings differences. Examination of the temporal estimates lends to the conclusion Western Region males may even experience larger positive earnings outcomes into the fifth year, as evidence shows a somewhat significant positive trend. It should be noted, however, that the actual number of unpaid internship recipients was smallest for males in the Western Region,

so trend estimates may be tenuous.

Unlike the earnings differences, statewide average employment differences for the 16-quarter observation period were positive for both males and females in unpaid internships. Males across the state realized a 3.8 percentage-point difference on average when compared to their control group counterparts. Over the 16 quarters observed, males experienced positive employment differences consistently, reaching a peak employment difference of 6.6 percentage points in the fourth quarter. Females in unpaid internships experienced a 2.6 percentage-point difference on average when compared to their control group. Quarterly estimates were positive for the majority of the quarters observed, reaching a high of 5.3 percentage points in the sixth quarter, but the treatment group did experience two quarters where their control group counterparts were more likely to be employed. The negative estimates for the employment percentage-point differences occurred later in the observation period, suggesting the possibility that the positive employment outcomes may not extend beyond the fourth year after the commencement of training.

Examining employment results by regions reveals that the positive outcomes are sensitive to the geographical location of the unpaid internships. For both males and females in the Wasatch Front South Region, employment differences for the treatment groups are consistently positive over the four-year period, though small in measure. Males and females in the Northern Region are quite similar with an average difference higher than the Wasatch Front South Region. The Eastern Region males and females exhibited average employment percentage-point differences that were much higher than the statewide average and, while the positive differences hold consistently on a quarterly basis, the trends in the region are quite volatile. This volatility suggests that a considerable portion of trainees will likely experience recurring periods of unemployment. For both males and females in the Mountainland Region, the results show net negative employment differences over the 16-quarter period. Of note, however, are the strongly positive employment differences for males in the Western Region, who, over the four-year observation period, never drop below a difference of 1.5 percentage points.

A possible explanation for the general difference in outcomes across regions may be the quality of the unpaid internship programs. Because these programs rely heavily on employers who will provide quality work experience for the trainees, the training service's success is contingent upon DWS having ties to employers willing to provide opportunities. It is logical to assume that these relationships vary across the state and thereby create differences in the potential for an unpaid internship to lead to positive labor market outcomes.

Figure 8.1. Unpaid Internships: Earnings Outcomes for Females

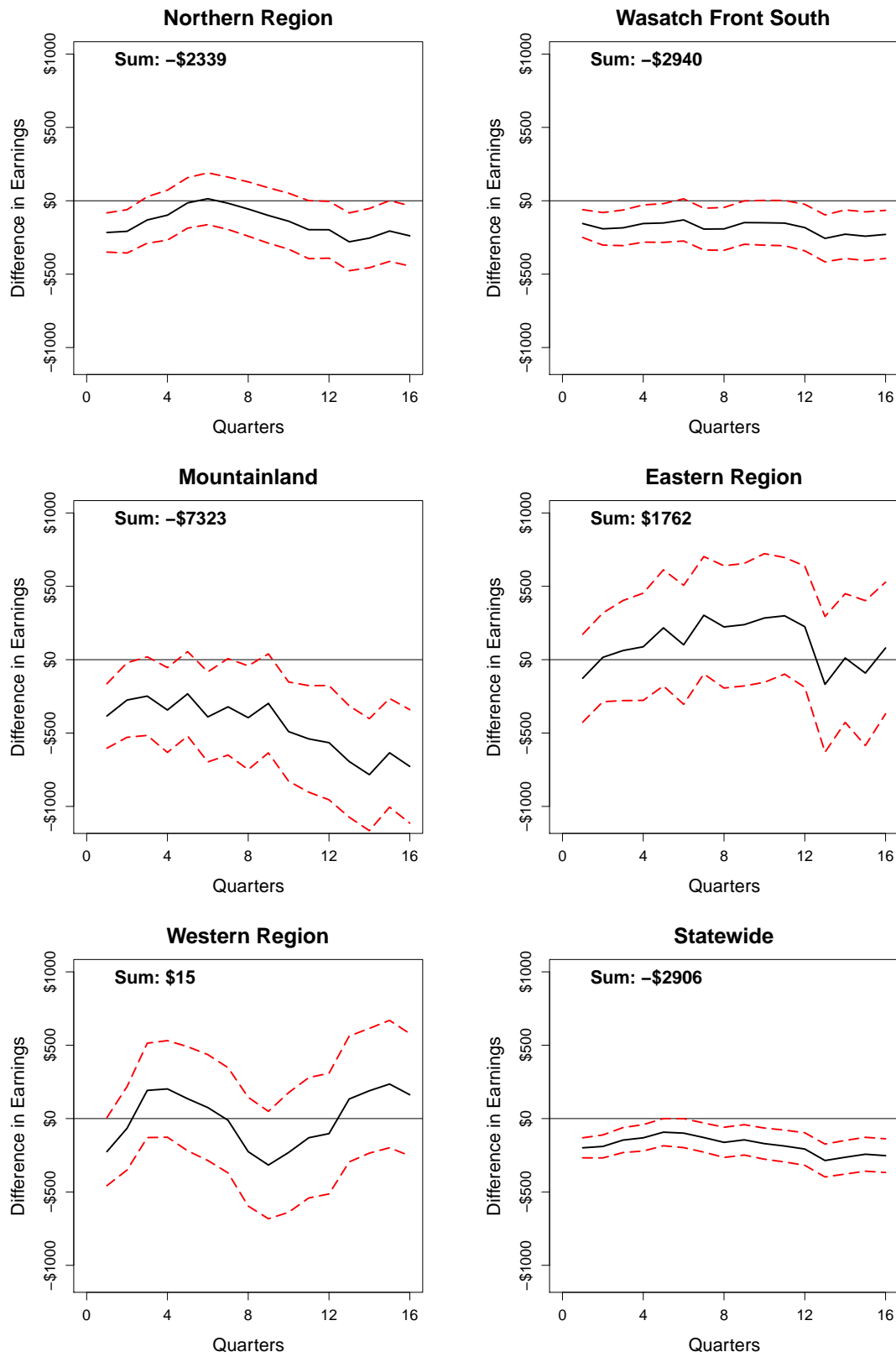


Figure 8.2. Unpaid Internships: Earnings Outcomes for Males

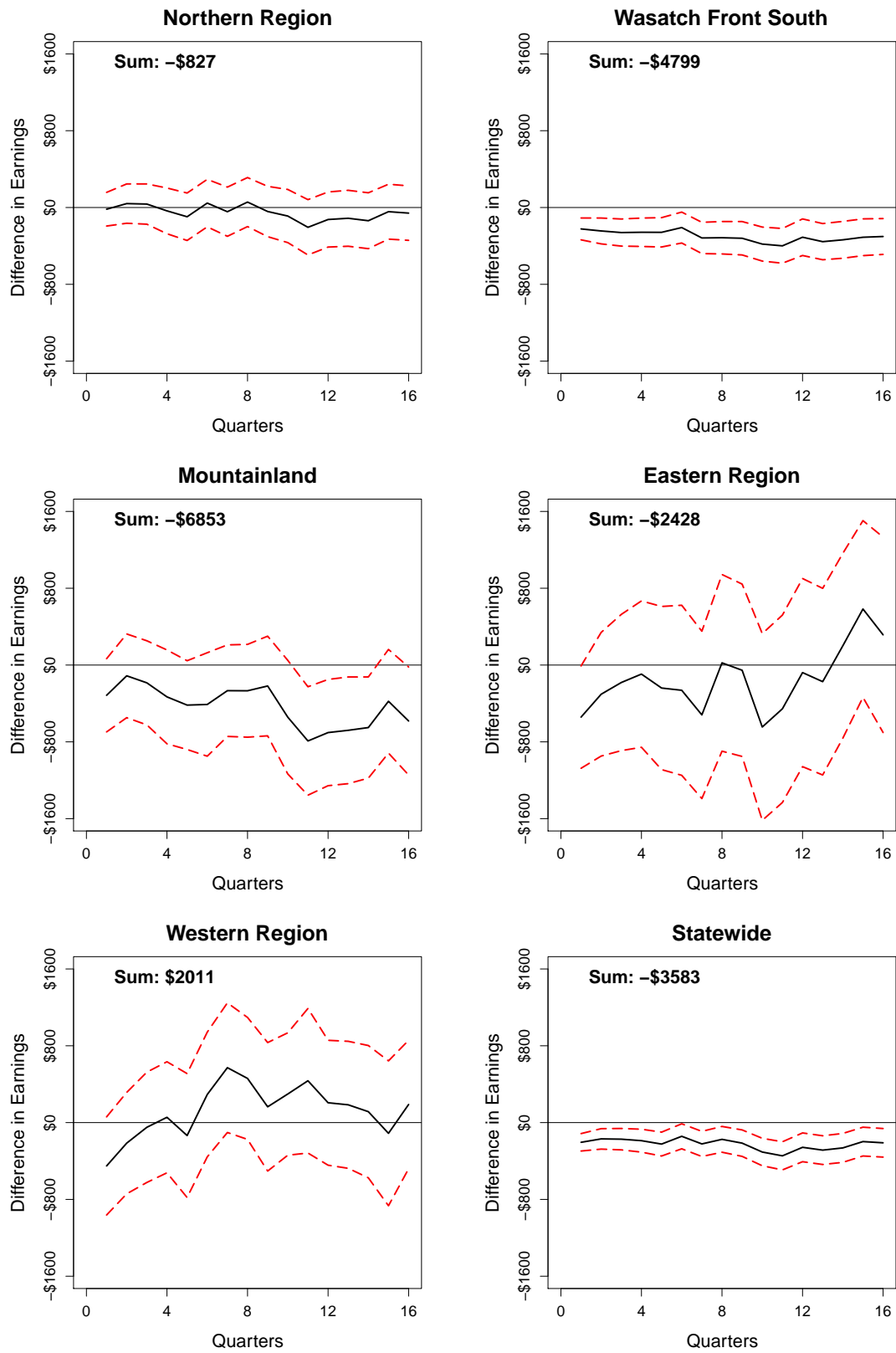


Figure 8.3. Unpaid Internships: Employment Outcomes for Females

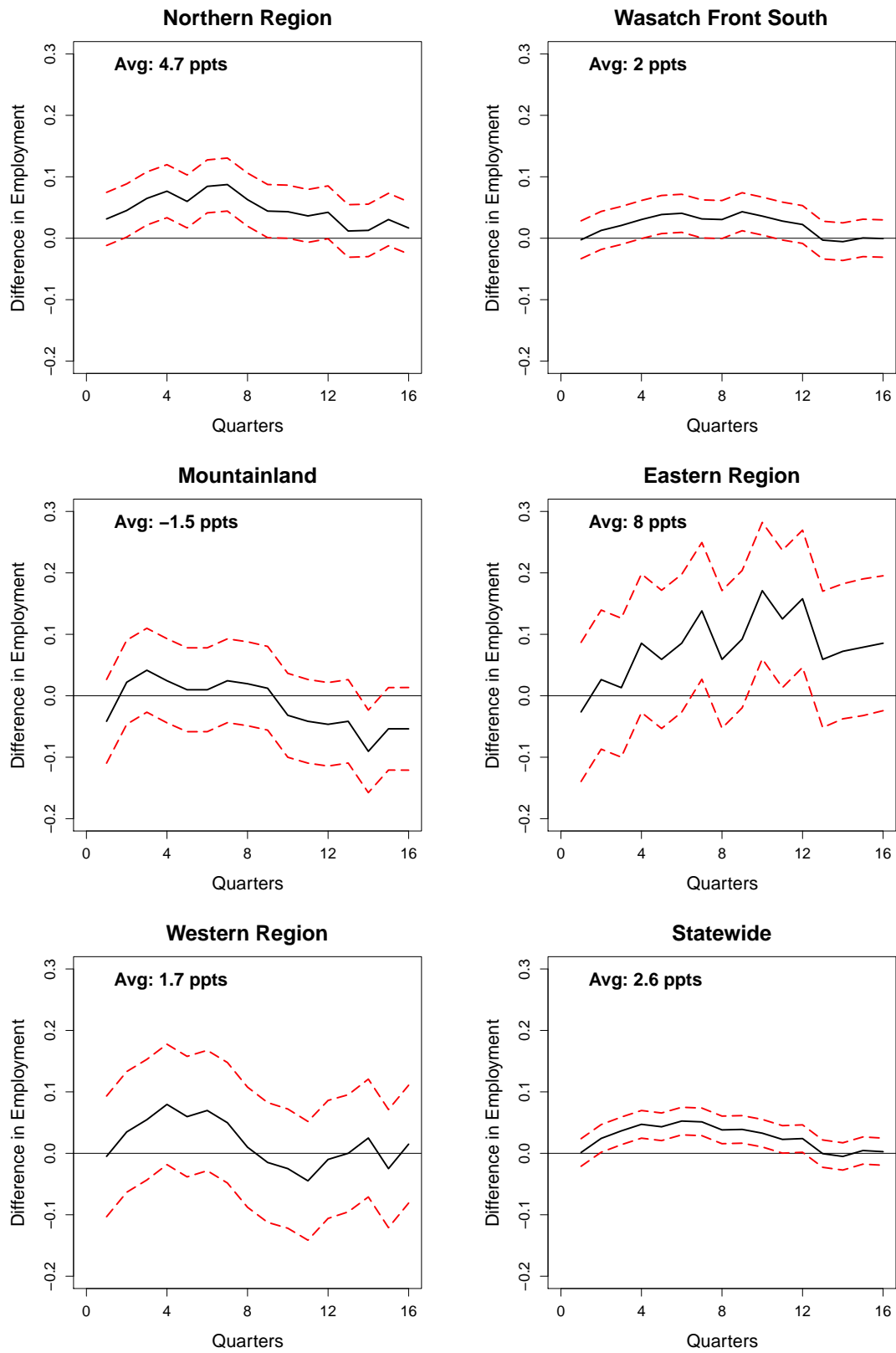
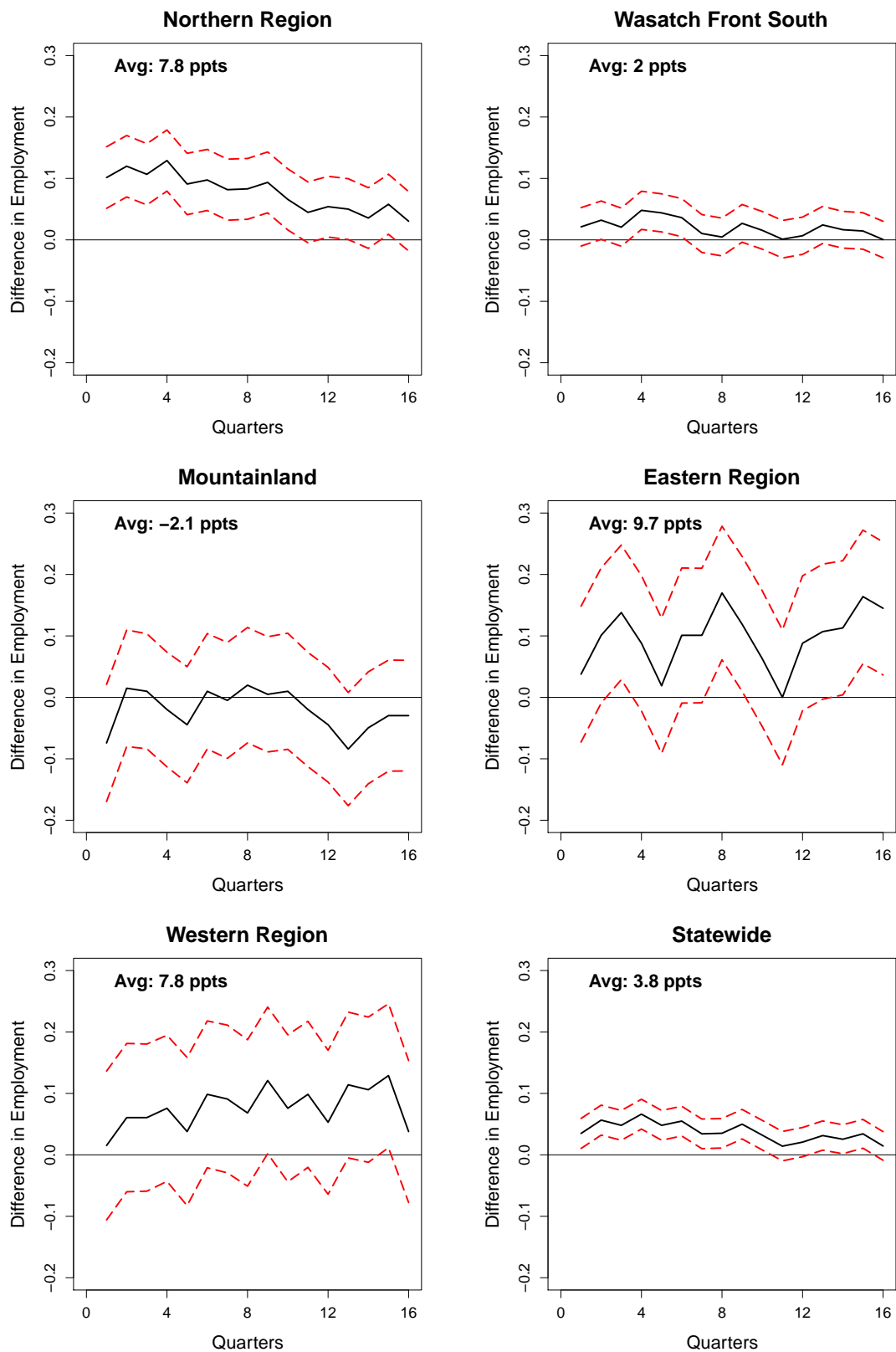


Figure 8.4. Unpaid Internships: Employment Outcomes for Males



# Chapter 9

## Life Skills

### 9.1 Characteristics of the Trainees

The life skills training service requires a careful characterization due to the fact that the term “life skills” is actually used as an umbrella for many different services rendered by DWS. For the purpose of this report, “life skills” refers specifically to only those services that are listed under the service “life skills (other).” The exact definition for life skills (other) as found in the *DWS Program and Policy Manual* is as follows:

Activities that lead to improving the customer’s general life skills. This includes money management courses, parenting, food and nutrition courses, etc. This service also includes the Life Management Skills Training Workshop and Assertive Communication Skills Training Workshop.

For this particular subset of life skills services, federal job training programs supply the majority of funding through a pool consisting of WIA, TANF, and NAFTA/TAA dollars. Other life skills services that were not included in this research because they are not funded by federal training dollars include cultural integration, family counseling, pursuing disability income, and employment mentoring. From the remainder of this report, the use of the term “life skills” will be understood as referring solely to those training services provided under the “life skills (other)” category.

The content of the life skills training services are strikingly different than the other training services examined in this study. For the sake of consistency, life skills is included in this research because it is a qualifying training expense under guidelines of the various federal training programs. However, unlike the other five training services, life skills involves training for skills that are less directly connected to labor market performance. Some individuals who approach DWS for assistance are in circumstances that preclude them from entering immediately into the labor market and such individuals may require basic instruction on money management and parenting prior to the consideration of more involved career planning decisions. Because

**Table 9.1. Counts for Life Skills Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Life Skills	1,628	1,717	1,375	488	576	5,784
<b>Males</b>						
	North	WFS	ML	East	West	State
Life Skills	467	736	401	208	211	2,023

these skills are viewed as necessary prerequisites for even relatively basic classroom or on-the-job training, these services are funded by federal job training dollars.

Similar to unpaid internships, individuals receiving life skills training do not receive any federal funding payments directly and all of the costs are in the form of administrative costs. Because the costs per life skills trainee are relatively low and the service develops skills that have wide applicability to individuals seeking assistance from DWS, the number of individuals receiving the service is significant. For the period in question, life skills had 7,807 participants, making it second for participation amongst the training categories, lagging occupational training by 1,583.

As shown in Table 9.2, significantly high proportions of life skills trainees receive TANF, food stamps, or both. This phenomenon, unlike the unpaid internships, is not driven by participation requirements because life skills does not meet such requirements. Rather, it is likely the case that enrollment in these training services is driven specifically by the circumstances of the individuals within the population most likely to be in need of life skills training. Low-income individuals who qualify for the aforementioned social assistance programs will typically be in greater need of life skills courses because they are usually less prepared to enter the workforce. The life skills training courses attempt to enable individuals to move into higher-level training programs with the eventual goal of achieving economic independence and stability.

**Table 9.2. Life Skills (Other) Trainees Receiving Social Assistance**

Gender	Life Skills (Other)	TANF Recipients	Food Stamps Recipients
Female	5,784	3,251	5,218
Male	2,023	406	1,785

## 9.2 The Results

While the federal funding of life skills training justifies its inclusion in this research, the very nature of the courses associated with life skills training helps to explain the

**Table 9.3. Summary of Outcomes for Life Skills Services**

<b>Females</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	−\$3,194	−\$4,599	−\$3,134	−\$2,734	−\$1,501	−\$3,389
Four-Year Average of Employment Differences	2.0	0.3	1.9	−1.2	3.1	1.3
<b>Males</b>						
	North	WFS	ML	East	West	State
Four-Year Sum of Earnings Differences	−\$3,894	−\$1,400	−\$4,588	−\$2,390	−\$3,873	−\$2,967
Four-Year Average of Employment Differences	3.3	3.5	−3.0	2.4	−3.5	1.3

generally poor results for these trainees relative to the two outcomes measures used in this study, earnings and employment, which are direct labor market outcomes. Life skills training involves the development of skills that are not directly related to these labor market outcome measures. A money management course, for example, may better prepare an individual to understand how to effectively budget income for the purpose of satisfying household financial responsibilities, but such a skill is not directly demanded by employers and, therefore, is not directly related to improving the individual's earning potential or chances of finding employment. Nevertheless, in a political environment where virtually all social programs are increasingly evaluated in terms of cost-benefit analyses expressed explicitly in dollars, the measurement of the employment and earnings outcomes of life skills trainees is an interesting and justifiable pursuit from a policy point of view.

For both males and females across the state, there are very few exceptions to the trend of negative earnings outcomes for life skills training recipients. Most of the exceptions, meaning positive differences in earnings, only happen in a single quarter and never give evidence of a possible upward trend extending past the observation period. One exception to this may be the males in the Eastern Region where positive earnings differences were observed in quarters three through seven. However, the earnings differences drop precipitously thereafter from a peak of \$441 in the fourth quarter to −\$611 in the fourteenth quarter.

The employment results are somewhat more promising, with the overall statewide four-year averages for both males and females measuring a 1.3 percentage-point difference. However, an examination of the results by time trend and region raises doubts concerning the lasting and meaningful effects of the life skills training in terms of employment. While it may be true that the averages over the four-year period in the various regions are positive in the majority, quarterly patterns suggest that the pos-

itive results are regionally specific and tenuous at best. For example, while females in the Northern Region showed a small but steady positive trend for employment differences over the observed time period, females in the Western Region exhibited a higher, yet much more erratic pattern of employment difference. Furthermore, the confidence intervals associated with the employment differences for females in the Western Region indicate that any female in that region has a higher likelihood of seeing no employment effect from life skills training.

It is important to reiterate the unique nature of the life skills training category. Because the services offered under this category are approved for federal training program funding to support the administrative costs, and the evaluation of the efficacy of these services was of considerable policy interest, the analysis of life skills was included in this report. However, it is easily argued that courses such as family nutrition are not designed to elicit measurable labor market outcomes. Regardless, for some individuals who face many economic and social barriers, the courses will be part of their training and education path that eventually leads to gainful employment, but certainly after many other intermediate steps are taken.

Figure 9.1. Life Skills: Earnings Outcomes for Females

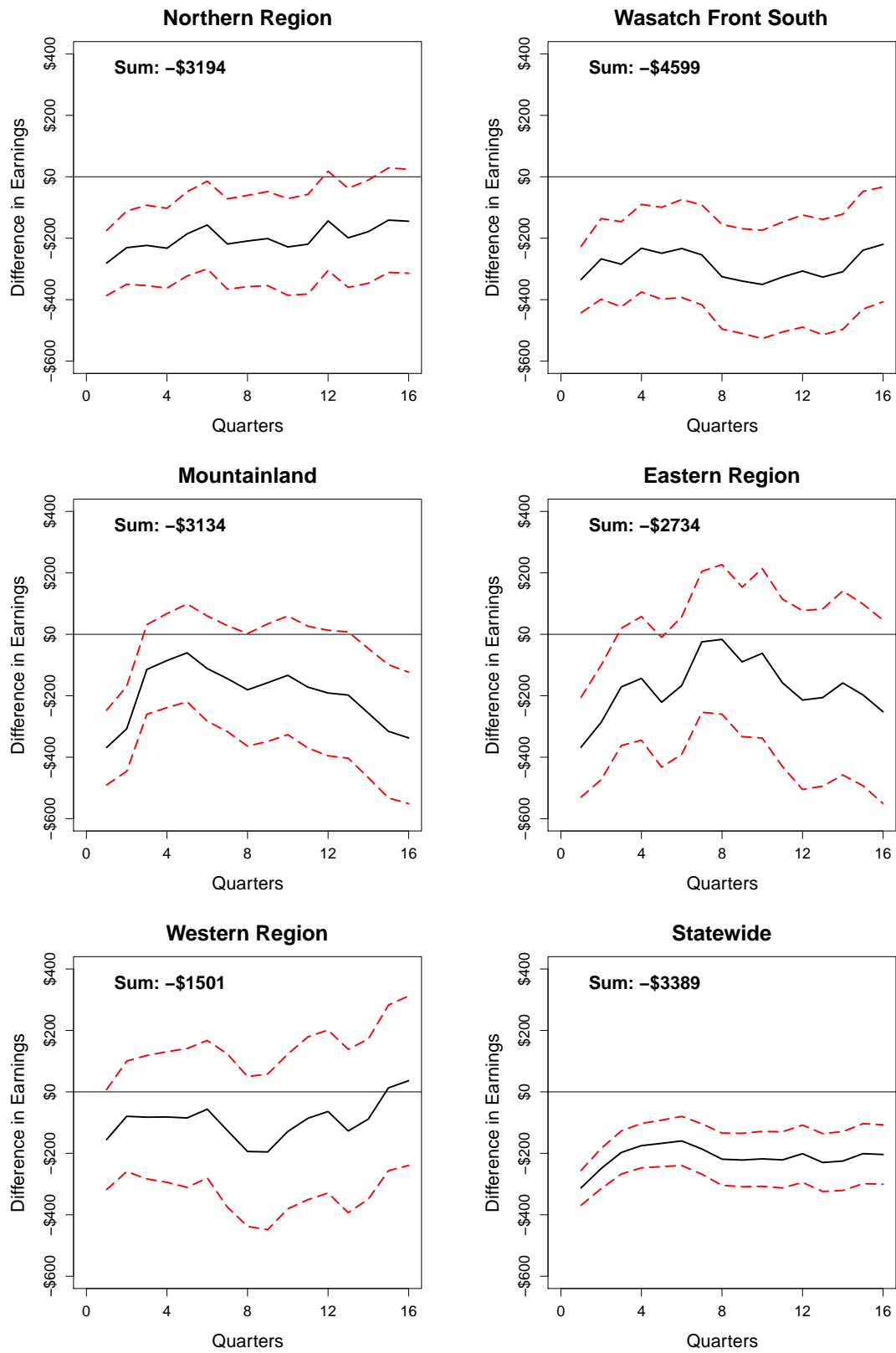


Figure 9.2. Life Skills: Earnings Outcomes for Males

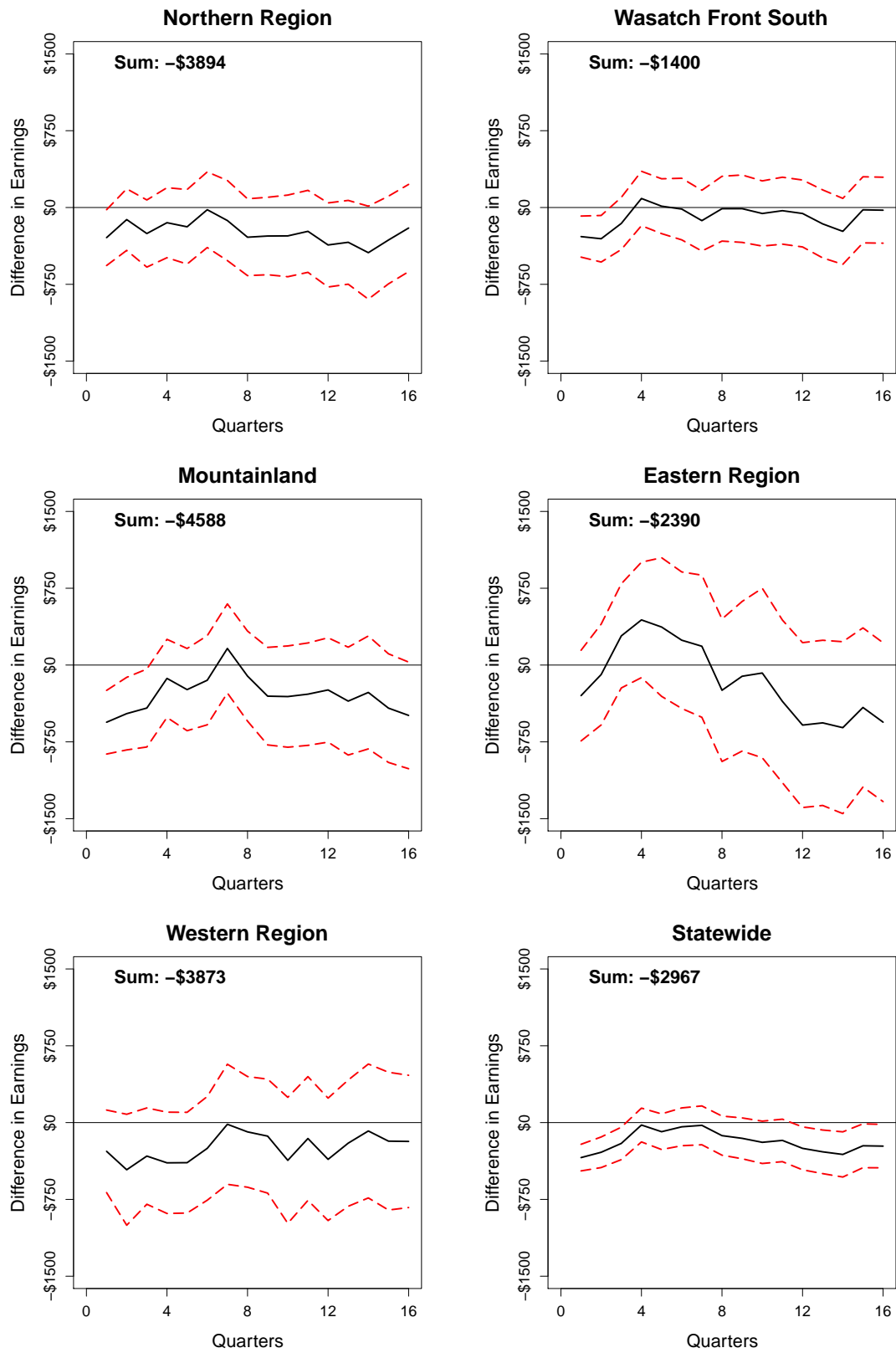


Figure 9.3. Life Skills: Employment Outcomes for Females

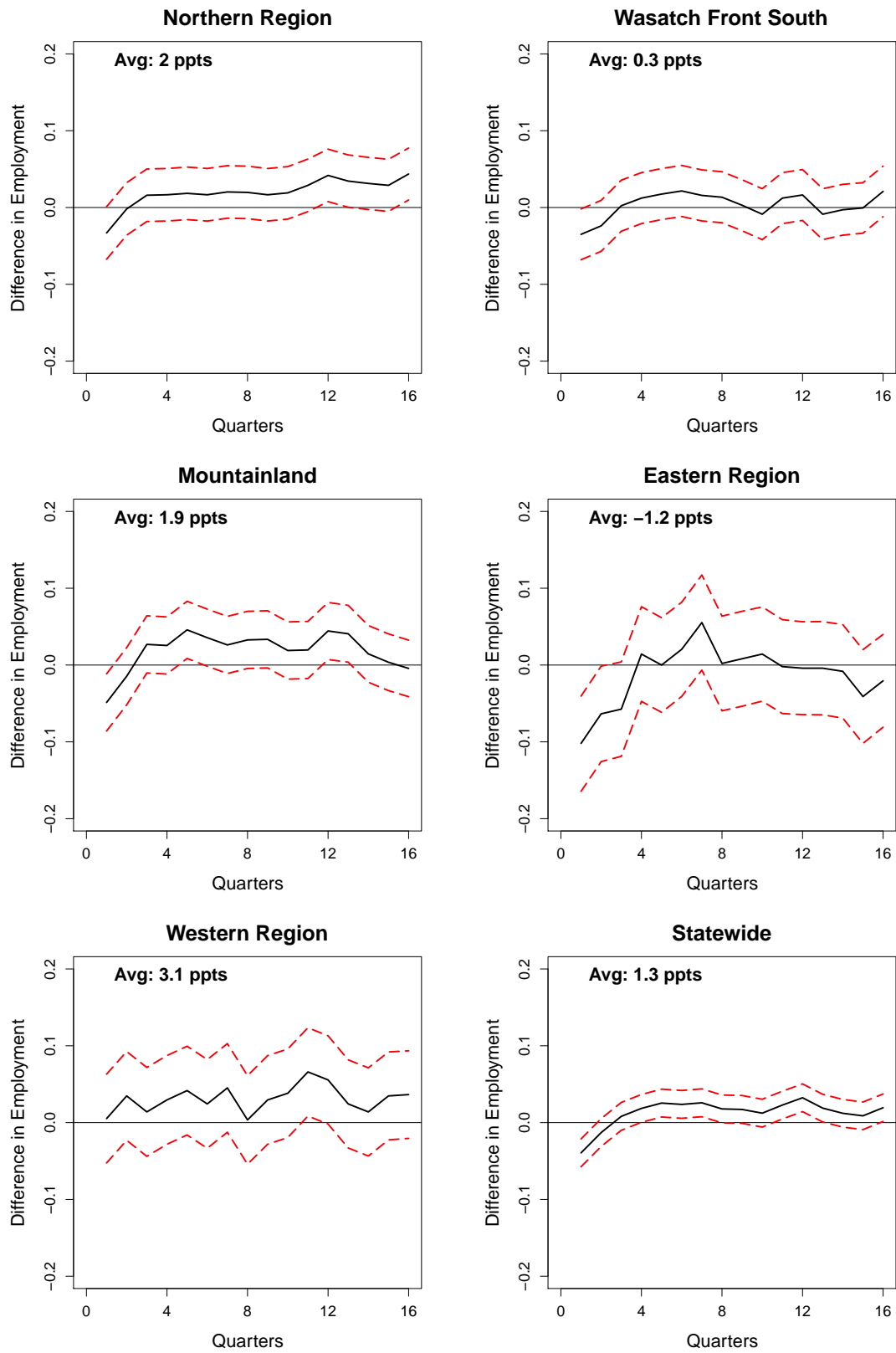
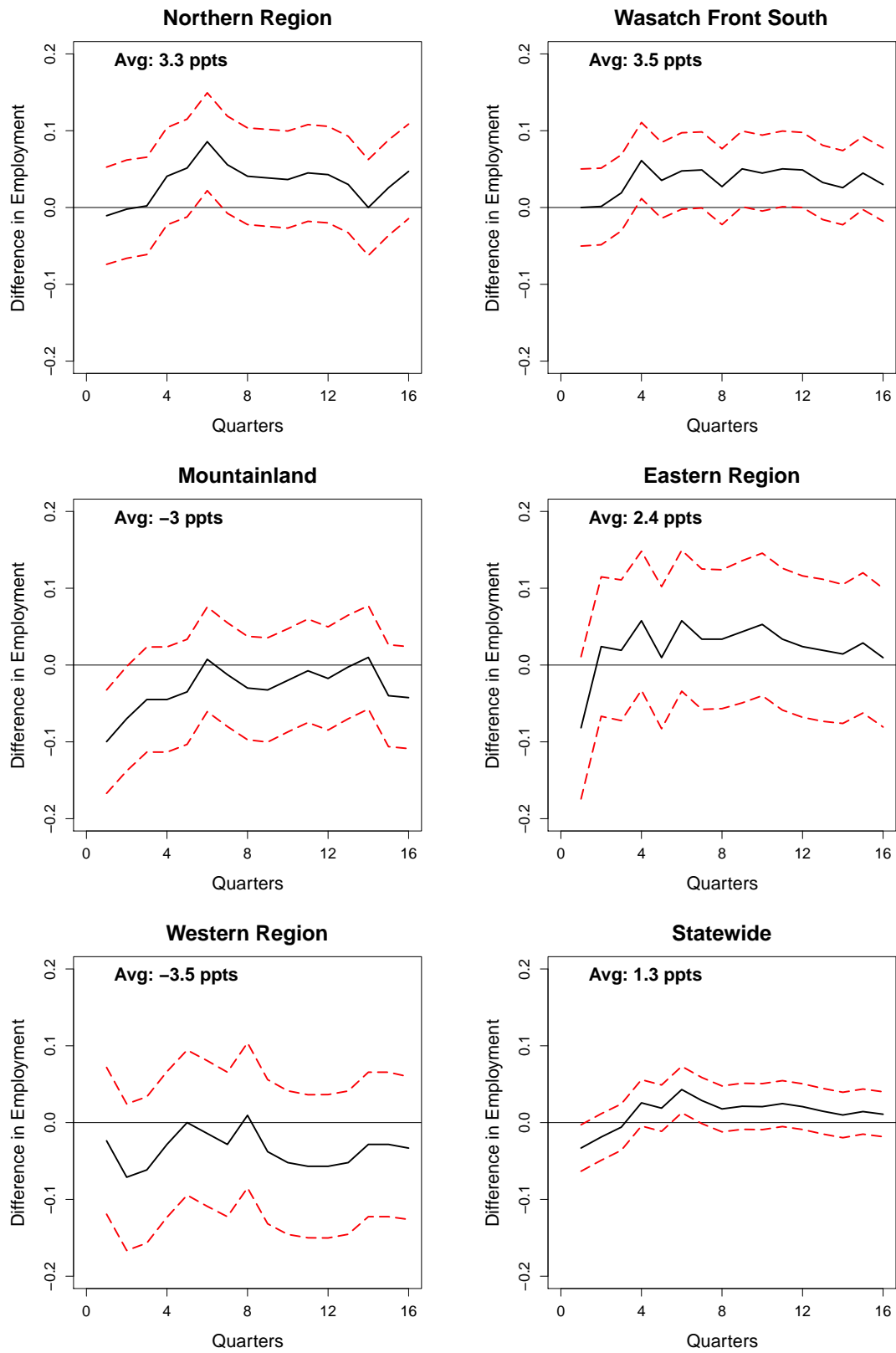


Figure 9.4. Life Skills: Employment Outcomes for Males



# Chapter 10

## Outcomes Based on the Level of Participation

### 10.1 Evaluating Agency Performance as Compared to Evaluating Trainee Attainment

The assumption maintained throughout this study was that all individuals who entered into job training services would be included in the analysis regardless of their recorded level of participation. This assumption was made because the research sought to determine the effectiveness of DWS as a provider of job training services as they have been administered historically to the entire population of DWS trainees.

The results discussed in earlier chapters, particularly those for degrees, certificates, and other training services of a formal or academic nature, are likely to appear to some as inconsistent or incorrect with respect to what is generally known about the relationship between earnings and levels of educational attainment. However, the results are inconsistent in appearance only. The well-known positive relationship between earnings and the level of educational attainment is, as the term “attainment” suggests, based on the actual completion of degrees and/or certificates for each level of education. The results contained in the previous chapters were not based on a separation of those who did complete their training services from those who did not. Therefore, the results cannot be interpreted as making any assertions about the general relationship between earnings and levels of educational attainment for DWS training service recipients. Instead, the results are properly interpreted only as characterizing the outcomes of all individuals who entered into training services with DWS regardless of whether these individuals subsequently completed their training service goals.

The positive relationship between earnings and educational attainment is clearly evident for the general population of workers in the State of Utah. Table 10.1 lists the average weekly earnings by level of educational attainment for individuals 25 years of

**Table 10.1. Earnings by Educational Attainment in Utah, 2010**

Level of Educational Attainment	Average Weekly Earnings
Less Than High School Diploma	\$459
GED or High School Diploma	\$667
Some College	\$701
Associate's Degree	\$713
Bachelor's Degree	\$985
Master's Degree	\$1,285
First Professional Degree	\$1,583
Doctorate Degree	\$1,894

*Source:* Current Population Survey, U.S. Census Bureau  
and Bureau of Labor Statistics

age or older in Utah as an average for 2010. The distinction between the estimates presented earlier in this study and those found in Table 10.1 can be made precise in reference to completion percentages. The estimates presented in Table 10.1 are based on the reported level of actual educational attainment, which is equivalent to a completion rate for each level of education of 100 percent. The results presented in the preceding chapters of this study, on the other hand, have completion rates that are far below 100 percent for every training service examined. Therefore, the earnings effects of training as reported in this study should generally be lower than estimates such as those in Table 10.1. Even though this issue has been expressed solely in terms of earnings, it should be noted that the employment outcomes in this study are also based on cohorts containing relatively large percentages of non-completers.

While an evaluation of the effectiveness of DWS as a provider of job training services was the primary focus of this research, it is of considerable interest to compare the outcomes of those who completed their training with those who did not. If the outcomes for completers and non-completers are significantly different, such results would suggest that an additional dimension needs to be taken into consideration within job training policy discussions. Not only would policy need to consider the choice of job training services that produces the best outcomes relative to a given policy target, but some consideration would need to be directed toward developing methods for improving the rate of completion.

## 10.2 A Decomposition of the Results

Given that the study of outcomes for completers and non-completers was not the central goal of this research, the material presented in this chapter should be viewed as ancillary. Moreover, the graphical presentation of the results should not be interpreted as a separate, careful, and complete analysis of the outcomes of completers and

non-completers. Instead, the earnings and employment outcomes presented in Figures 10.1 through 10.4 are merely the decompositions of the statewide outcomes into completers, non-completers, and those whose outcomes were indeterminate. Strictly speaking, the outcomes cannot be taken to represent precise estimates of the differences between completers and a suitable control group because completers and non-completers may have very different characteristics when separated into distinct groups as compared to when they are taken as a whole. In order to arrive at a valid analysis of the outcomes for those who complete their training service goals and those who did not, these two groups would need to be rematched separately to produce new comparison groups for the calculation of appropriate outcome differences.

Nevertheless, the decomposition of the results into completers and non-completers is not without value. Because it is unlikely that completers and non-completers can ever be accurately identified prior to entering training, practical expectations with respect to earnings and employment outcomes must be based on the entire cohort that enters into training. Yet, the decomposition of the outcomes clearly reveals how the aggregate results are determined by the outcomes for completers and non-completers. With only a few exceptions, completers show very large positive improvements in outcomes as compared to the control group, while non-completers tend to exhibit significant declines. In these cases, it follows that the earnings and employment differences for completers are much larger than for the total group of trainees. In some cases, the negative outcomes of non-completers coupled with their constituting a large percentage of the total cohort effectively swamp the positive outcomes of completers, thereby producing no effect or a negative effect in the group as a whole. Recognition of the possibility that the strong positive results of those who complete training can be negated in the aggregate by the non-completers should serve to emphasize the policy importance of finding methods for improving completion rates.

The statewide completion rates by gender and the six training service groups studied in this research are presented in Table 10.2. For some of the recorded service outcomes, it was impossible to determine whether the individuals had completed their training service. This necessitated constructing a third category, called “other outcomes,” to account for those whose completion status was indeterminate. Each individual classified under “other outcomes” had a known outcome in the sense of having a recorded outcome value in the data set, but, for some of the outcome categories, the determination of the completion of the service was still unclear. For all of those who entered training, at least 25 percent did not complete the service. The lowest completion percentages for both males and females are found among those seeking a GED or high school diploma. Just over 75 percent of all individuals who entered into this service were coded as non-completers. The highest completion rates for males and females were in occupational training. Females had higher rates of completion for the GED/HS diploma, paid internships, unpaid internships, and life skills services whereas males had higher completion rates for degree programs and occupational training. Overall, 43.3 percent of males and 38.3 percent of females

**Table 10.2. Statewide Completion Rates by Service Groups**

<b>Females</b>			
	Completed	Did Not Complete	Other Outcomes
Degree Programs	22.9%	62.1%	15.1%
Occupational Training	52.5%	39.6%	8.2%
GED/HS Diplomas	15.5%	76.4%	8.0%
Paid Internships	47.8%	49.7%	2.5%
Unpaid Internships	28.5%	71.0%	0.5%
Life Skills (Other)	47.7%	52.3%	0.0%
<b>Males</b>			
	Completed	Did Not Complete	Other Outcomes
Degree Programs	41.6%	49.6%	8.8%
Occupational Training	69.8%	26.0%	4.2%
GED/HS Diplomas	12.9%	77.0%	10.0%
Paid Internships	41.8%	57.6%	0.6%
Unpaid Internships	23.6%	75.5%	1.0%
Life Skills (Other)	46.1%	53.9%	0.0%

were reported as completers, while 53.6 percent of males and 56.7 percent of females were reported as non-completers.

The decompositions of statewide results into completers, non-completers, and “other outcomes” are presented in Figures 10.1 through 10.4 for the six training service groups.<sup>1</sup> The figures demonstrate a remarkable similarity in the general patterns of outcomes for females and males with respect to each particular service group. In order to provide concrete comparisons between the results of the previous chapters and those for completers, the average quarterly differences for the fourth year will be compared.

Degree programs and occupational training show the same general pattern of a steady increase in earnings and employment outcomes for completers in comparison to the results found in Chapters 4 and 5. However, the differences in outcomes for completers relative to the control group are considerably higher. In the fourth year after beginning training, male completers in degree programs earned \$2,516 per quarter more than the control group as compared to a difference of \$1,186 for the entire cohort and females degree completers earned \$2,387 per quarter more than their control group as compared to a difference of \$852 for their entire cohort. For

<sup>1</sup>For each set of results, multiplying the outcomes for completers, non-completers, and “other outcomes” by their respective percentages in Table 10.2 will produce the statewide results for the entire cohort as presented in Chapters 4 through 9. The “other outcomes” groups for paid internships, unpaid internships, and life skills were not plotted in Figures 10.1 through 10.4 because there were so few individuals with indeterminate outcomes for these services that including their outcomes might over-emphasize their importance relative to completers and non-completers.

occupational training, male completers exhibited an earnings difference of \$1,134 per quarter in the fourth year versus \$519 for the whole group, while female completers demonstrated an earnings difference of \$826 per quarter versus \$302 for their group. Employment outcomes for these two service groups were also significantly better for male and female completers as compared to their entire training cohorts. The employment differences for male and female completers in both degree programs and occupational training were at least 4.7 percentage points higher in comparison with each of their respective total cohorts. In the case of females pursuing a degree, completers exhibited an 18.9 percentage-point difference over the control group as compared to a 9.3 percentage-point difference for all female degree trainees.

For trainees pursuing a GED or high school diploma, the statewide earnings differences were negative on average during the fourth year after training for both males and females. When the completers are separated from the non-completers, the completers show steady increases in earnings differences as compared to the control groups. Statewide, the average quarterly earnings difference for males in the fourth year was \$974 and for females it was \$580. Even though the results in Chapter 6 showed positive employment differences for males and females, the improvements over the control groups are considerably larger for completers. For males, the entire cohort exhibited a 7.5 percentage-point employment difference on average in the fourth year, but the completers showed a 17.6 percentage point improvement over the control group during the same period. While the group of all female trainees pursuing a GED or high school diploma showed an average quarterly employment improvement of 6.3 percentage points over the control group in the fourth year, female completers saw an employment difference of 17.3 percentage points. This training service is an example of a case where earnings for completers show significant improvement, but due to the small percentage of those who completed, the overall earnings differences are negative.

The decomposition of the paid internships results revealed a large gulf between completers and non-completers. Outcomes for completers and non-completers appear as mirror images of each other with respect to the horizontal axis, with earnings and employment differences strongly positive for completers and strongly negative for non-completers. Completers show large, immediate improvements in earnings and employment, which should be expected with paid internships. However, the effect apparently persists as earnings and employment gains for completers remain relatively stable over the four-year observation period. Male completers saw an average earnings difference of \$2,120 per quarter in the fourth year as compared to \$381 for the whole group and female completers saw an earnings improvement of \$868 on average as compared to \$109 for their entire group. Employment outcomes were also much better for completers. Male completers showed a 23.6 percentage-point employment improvement over the control group versus a 6.6 percentage-point difference for the whole cohort, while female completers experienced a 15.1 percentage-point improvement versus 3.6 percentage points for all females in paid internships.

Whereas completers in paid internships showed large improvements relative to non-completers, the differences for unpaid internships are comparatively small. Yet, completers in unpaid internships did exhibit distinctly better outcomes than non-completers. The average quarterly earnings difference for female completers in the fourth year was \$128 as compared to  $-\$261$  for the entire group and males completers showed an earnings difference of \$141 in comparison to  $-\$240$  for their entire group. As for employment, female completers averaged a 7.2 percentage-point improvement over their control group during the fourth year when the group as a whole showed no improvement and male completers demonstrated a 7.3 percentage-point improvement as compared to 2.6 percentage points for their whole cohort. While the differences between completers and non-completers are relatively small, completers do seem to show positive effects from unpaid internships.

The life skills training is the last service considered in this chapter and the decompositions for this training service are possibly the most interesting. The interest lies in the fact that the differences between completers and non-completers are negligible. It should be noted that earnings and employment outcomes may not be the proper dependent variables for measuring the effectiveness of life skills training.<sup>2</sup> Nevertheless, as a federally-reported training service, the earnings and employment outcomes were analyzed for those entering life skills training. Female completers showed a slight earnings improvement over the non-completers, but even female completers exhibited negative earnings differences on average for each quarter in the fourth year. The earnings differences for male completers and non-completers were essentially the same. With respect to employment differences, female completers showed a slight improvement over non-completers (3.3 percentage points compared to 1.5 percentage points), while male completers showed no employment improvement as compared to the control group. The life skills service is the only one that shows virtually no difference between completers and non-completer with respect to earnings and employment outcomes.

These decompositions of the results were included because of a general interest in the outcomes of completers relative to non-completers. As expected, completers appear to do better than non-completers in nearly all service groups. In the case of life skills, the decompositions were very informative precisely because they did not show large differences by level of participation. Perhaps, though, the greatest value of the material presented in this chapter is the emphasis it places on the importance of improving completion as a potential policy goal.

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<sup>2</sup>See Chapter 9 for a discussion of this point

Figure 10.1. Statewide Earnings Outcomes by Participation: Females

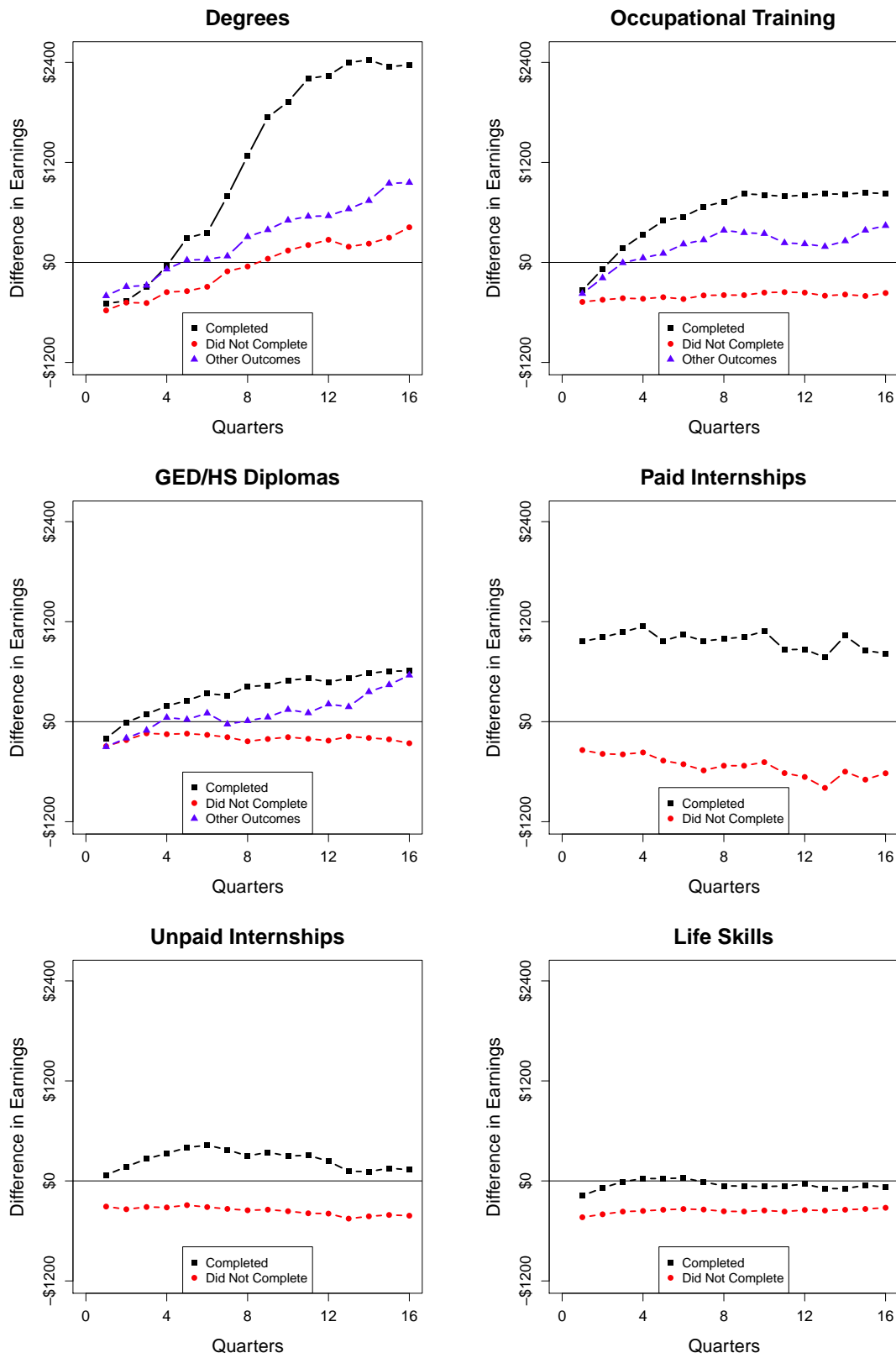


Figure 10.2. Statewide Earnings Outcomes by Participation: Males

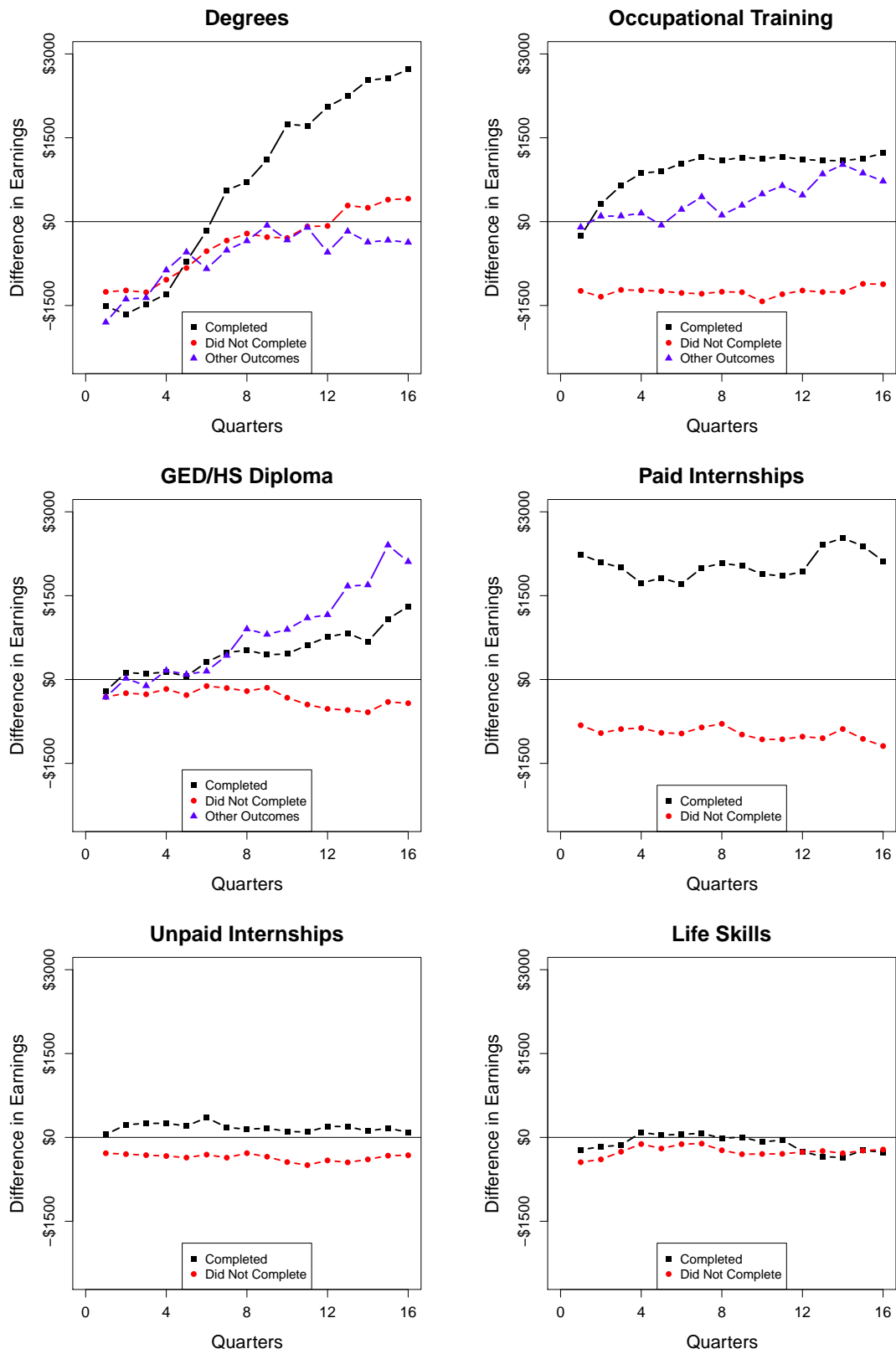


Figure 10.3. Statewide Employment Outcomes by Participation: Females

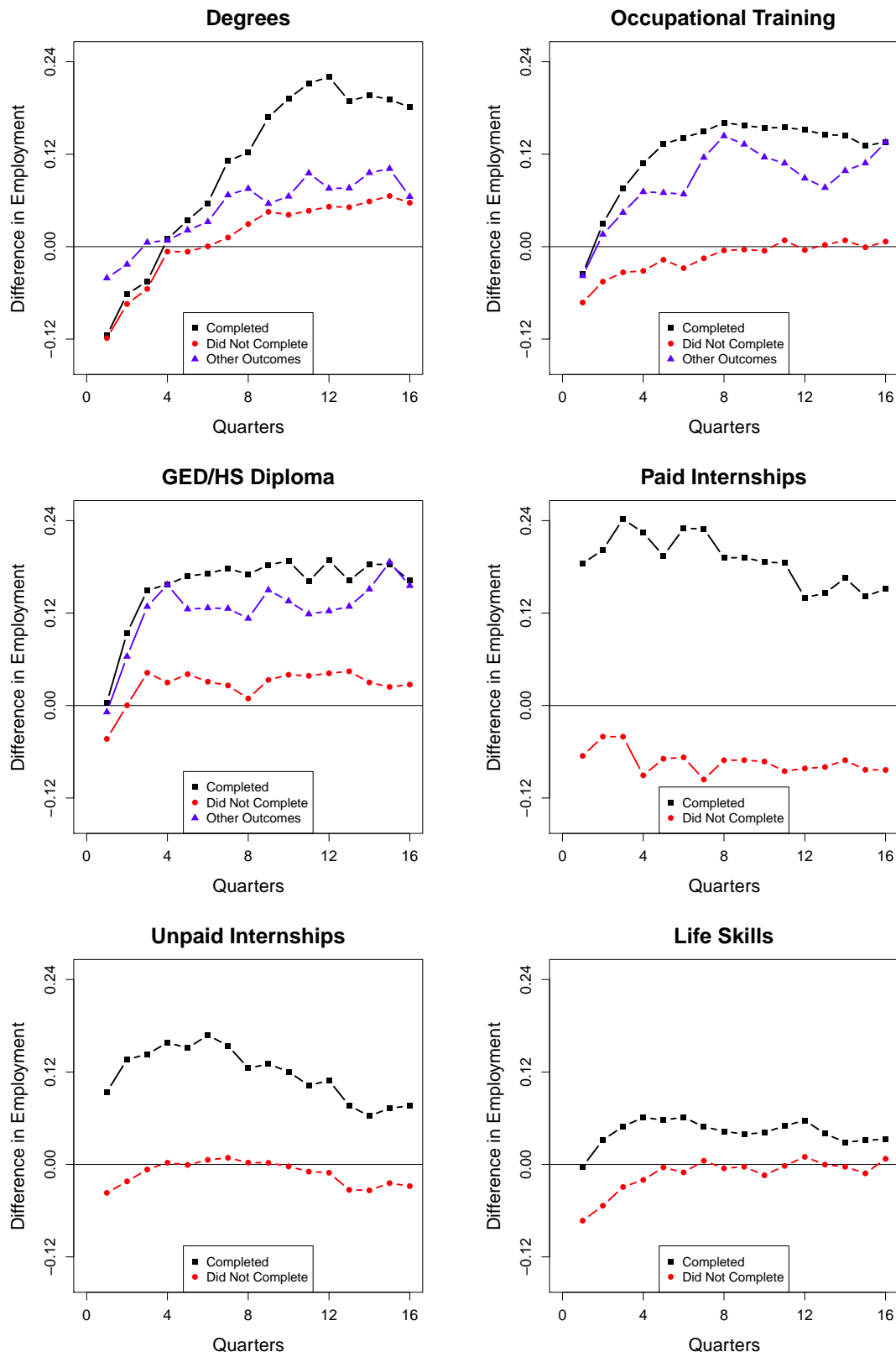
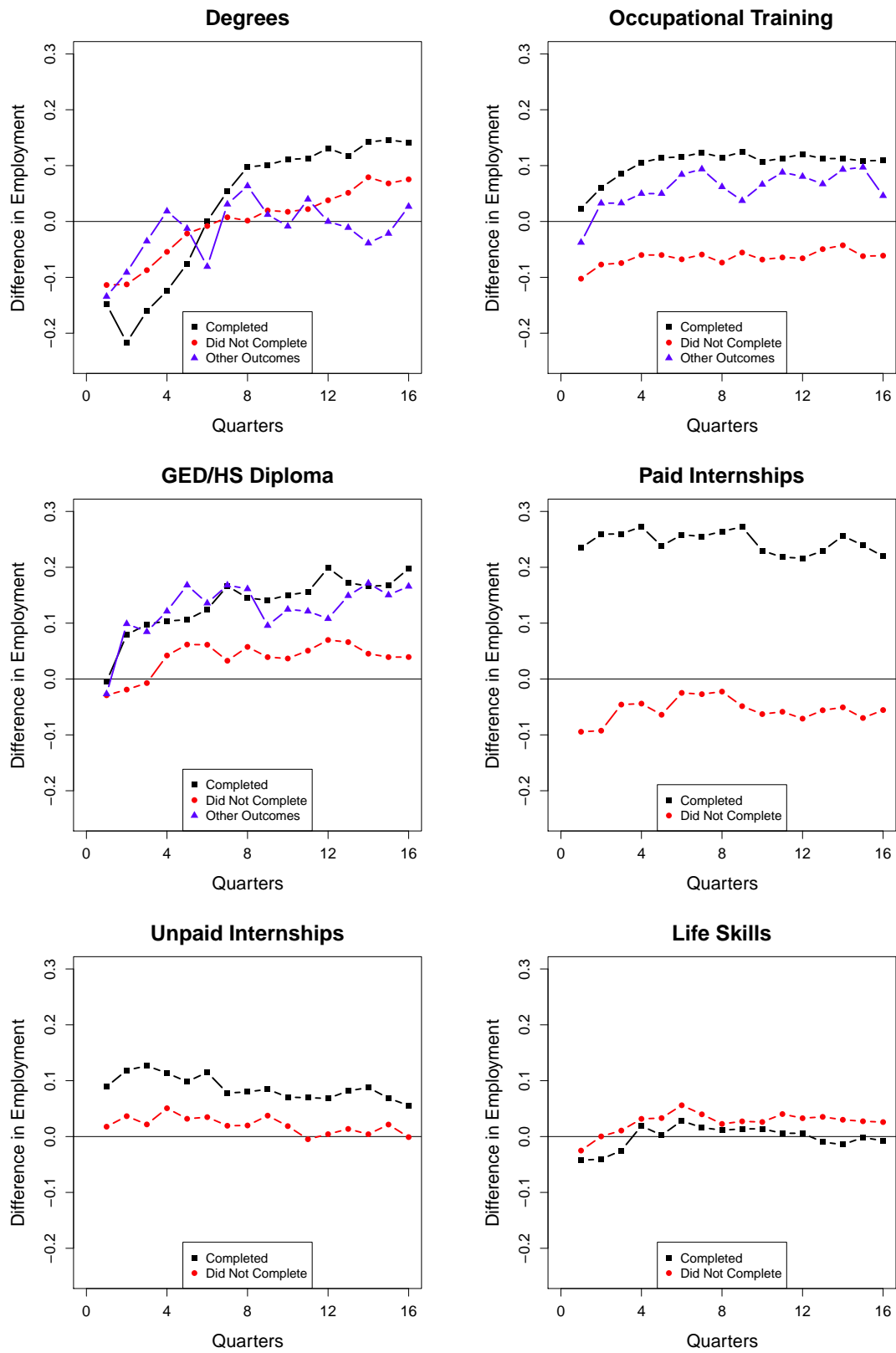


Figure 10.4. Statewide Employment Outcomes by Participation: Males



# Chapter 11

## Summary and Conclusions

The underlying motivation for the research discussed herein was to answer the question of whether training programs are effective in realizing positive labor market outcomes. The results presented in Chapters 4 through 9 show that the answer to this question cannot simply be asserted in the affirmative or negative. Results vary significantly from one training category to another, even to the extent that for some cases one must question whether labor market outcomes are the relevant performance measure to use to evaluate all the training services allowed under the Employment and Training Administration's federal training programs.

### 11.1 Review and Summary of the Results

Table 11.1 presents the four-year statewide outcomes for the six training services for females and males, bringing together some key measures discussed in the results chapters. For females in the treatment groups, the highest earnings differences over the observed four-year period occurred in degree programs, and the highest employment differences were found in the group receiving occupational training. For males however, the highest earnings differences happened for individuals who received occupational training, and the employment difference was highest for those who received the paid internship service. The weakest female results for both employment and earnings were observed in the life skills training service. For males, the lowest earnings difference was measured in unpaid internships and for employment the smallest difference was in degree programs.

What is notable in comparing the outcomes estimates of the six different training categories is the fact that the results did not always follow previously established expectations on training service outcomes. For example, while it is usually said that classroom training services yield positive outcomes, this isn't necessarily the case when examining the Utah results. Unlike the approach taken to analyze JTPA services in Orr et al. (1996) or the collection of training analyses reviewed by Card et al. (2010), in this study the classroom training services were divided into three dis-

**Table 11.1. Four-Year Statewide Summary Results**

<b>Females</b>		
	Four-Year Sum of Earnings Differences	Four-Year Average of Employment Differences
Degree Programs	\$4,585	3.9
Occupational Training	\$2,403	6.4
GED/HS Diplomas	−\$1,440	5.4
Paid Internships	\$3,294	5.2
Unpaid Internships	−\$2,906	2.6
Life Skills (Other)	−\$3,389	1.3
<b>Males</b>		
	Four-Year Sum of Earnings Differences	Four-Year Average of Employment Differences
Degree Programs	\$741	0.9
Occupational Training	\$5,396	5.7
GED/HS Diplomas	−\$1,647	5.8
Paid Internships	\$4,919	7.2
Unpaid Internships	−\$3,583	3.8
Life Skills (Other)	−\$2,967	1.3

tinct subcategories: degree programs, occupational training, and GED/HS diploma. Degree programs and occupational training did indeed follow the expected pattern of yielding positive results over the four-year period, but GED/HS diploma broke expectations, yielding low and, in some cases, negative differences for the treatment group. Had these three training services been aggregated for the analysis, this phenomenon may possibly have been masked. Knowing that GED/HS diplomas have not met expectations is significant in informing policy and increasing the overall effectiveness of the training services.

General beliefs about the urban-rural economic contrast would logically lead to the expectation that a clear divide would exist between the outcomes measured for the two different groups. The availability of training providers, prevalence of businesses providing internship opportunities, as well as ease of access to these resources might lead to the conclusion that outcomes in the urban areas of Utah (Wasatch Front South, North, and Mountainland) would systematically exceed those measured in the rural areas of the state (Western and Eastern regions). However, in this study, there was no clear urban-rural pattern observed. While the worst outcome occurred in rural Utah (Eastern Region males in degree programs had the lowest employment and earnings differences), some of the best results were also observed in the rural regions (employment outcomes for males receiving GED/HS diploma services in the Western Region were second only to those for males assigned to paid internships in the Mountainland Region). Two specific factors may explain these anomalous

results. First, it is indeed the case in Utah that administrators in the rural areas of the state wisely take advantage of the dynamics of small communities and build close partnerships with some training providers and employers. In some cases, they are able to parlay these relationships into successful training experiences for the DWS clients in need of training. The second factor is the small number of training cases in the rural areas. Because there are simply fewer observations of treatment in the Eastern and Western regions, this lessens the ability of the results measured in this study for the rural areas to reflect all the general outcomes for the services. And while these factors present fair and reasonable explanations for a lack of an urban-rural dichotomy in the results, additional research is necessary to exactly determine the reason for this contradictory result.

**Table 11.2. Annual Statewide Estimates for Females**

<b>Earnings Differences</b>				
	Year 1	Year 2	Year 3	Year 4
Degree Programs	−\$1,632	\$209	\$2,599	\$3,409
Occupational Training	−\$703	\$701	\$1,195	\$1,209
GED/HS Diplomas	−\$650	−\$338	−\$291	−\$161
Paid Internships	\$1,264	\$884	\$709	\$437
Unpaid Internships	−\$667	−\$483	−\$711	−\$1,045
Life Skills (Other)	−\$934	−\$732	−\$863	−\$860
<b>Employment Differences</b>				
	Year 1	Year 2	Year 3	Year 4
Degree Programs	−5.4	3.2	8.6	9.3
Occupational Training	0.7	7.8	8.9	8.3
GED/HS Diplomas	2.8	5.7	6.8	6.3
Paid Internships	7.3	5.9	4.2	3.6
Unpaid Internships	2.7	4.6	3.0	0.0
Life Skills (Other)	−0.6	2.3	2.1	1.5

Tables 11.2 and 11.3 show a breakdown of the statewide male and female earnings and employment differences on a yearly basis. Examining the results at this level of detail brings to light a few key findings. The first is the importance of measuring outcomes for a sufficiently long period of time. Degree programs, for example, do not show positive earnings outcomes in the first year. The rational explanation for this would be that in the first year the trainee would be completing course work and therefore not participating in the labor market, or participation is at a tempered level (e.g., part-time employment) to accommodate the demands of the degree program. In year two, modest positive outcomes are realized, which is a result that aligns with expectations about labor market outcomes for degree programs. However, summing the results over the first two years of observation still renders negative results in the

**Table 11.3. Annual Statewide Estimates for Males**

<b>Earnings Differences</b>				
	Year 1	Year 2	Year 3	Year 4
Degree Programs	−\$5,323	−\$979	\$2,298	\$4,744
Occupational Training	−\$206	\$1,633	\$1,893	\$2,075
GED/HS Diplomas	−\$768	−\$246	−\$421	−\$212
Paid Internships	\$1,371	\$1,161	\$859	\$1,528
Unpaid Internships	−\$736	−\$763	−\$1,125	−\$959
Life Skills (Other)	−\$859	−\$284	−\$772	−\$1,052
<b>Employment Differences</b>				
	Year 1	Year 2	Year 3	Year 4
Degree Programs	−11.6	0.5	6.0	9.0
Occupational Training	2.8	6.8	6.7	6.2
GED/HS Diplomas	1.3	7.4	7.0	7.5
Paid Internships	6.9	8.9	6.5	6.6
Unpaid Internships	5.1	4.3	2.9	2.6
Life Skills (Other)	−0.8	2.7	2.2	1.2

aggregate. Differences in earnings continue to increase on the margin through years three and four, exhibiting a pattern of increasingly larger positive differences that would likely continue into year five and beyond. Characterizing the training benefits of degree programs based only on the first two years of observation would lead to incorrect conclusions on the capacity for degree programs to raise the wages and employability of the trainees.

Another important result that is highlighted in the yearly outcomes measures is that while some training categories render negative results temporarily, there are other categories where the negative results are long lasting and require careful consideration. Both life skills and unpaid internships show consistently negative differences, meaning those who received the treatment actually experienced worse labor market outcomes than their control group counterparts. These results are unusual and require some discussion.

If treatment has no effect, the estimates should show a flat trend at or statistically near zero. However, in the case of male and female earnings differences for the life skills and unpaid internship categories, this is clearly not the case. The measured differences are strongly negative for all four years of observation, implying that receiving a life skills service or participating in an unpaid internship actually causes the trainee's earnings to decrease relative to the control group. This could be due to one or a collection of factors unaccounted for in the matching process that systematically affect training individuals adversely. Further analysis would be required to test this hypothesis. Another potential explanation are the low completion rates observed in

these training service categories. Only 28.5 percent of females and 23.6 percent of males were recorded as having completed their unpaid internships. For life skills, those percentages were 47.7 and 46.1, respectively. When the outcomes are separated by completion status the results change significantly. (See Chapter 10, Figures 10.1 through 10.4.) In every case but males in life skills, completers actually experienced positive outcomes for unpaid internship and life skills training participation, but when aggregated with non-completers whose numbers overwhelm the completers, the overall results sum to a negative measure. Clearly there is a strong completion effect manifesting in the negative outcomes for these two training service categories.

## 11.2 Policy Implications

As indicated by the previous section, many factors affect the significance of training as a determinant in raising the employability and earnings potential of those participating in the training service. As such, a sweeping argument to either curtail or expand federal training program funding simply cannot be justified on the basis of the results stemming from this research. Nevertheless, the results do provide useful information for the purpose of developing more nuanced policy measures and informing training program administrators on how best to implement training services to fully realize the potential labor market outcomes for the individuals involved.

The results in this study support the well-documented statement that increasing an individual's educational attainment results in higher income and lower rates of unemployment. For the majority of dimensions examined in this study, the trend over the four years of observation showed that participating in a post-secondary degree program would garner an individual higher wages and more employment at an increasing rate over time. Additionally, the estimates strongly support the prediction that the trend continues long after the four-year observation period. The positive results, however, will not be realized until at least the second year after the treatment commences and take even more time to compensate for the negative outcomes in the early stages of treatment. From a policy standpoint, the delay in positive outcomes must be weighed against the lasting effects of the treatment. In the case of a training program that is slow to realize results but will likely garner the trainee positive labor market effects that will grow beyond the period in which the individual is in contact with the training agency, many issues will likely determine whether such a policy is appropriate.

Often, policy decisions are made in the face of short timelines and therefore require immediate results. Should it be necessary from a policy standpoint to prove positive employment and earnings differences early in the treatment timeline, an alternative training service to degree programs is occupational training. Tables 11.2 and 11.3 show that those receiving the occupational training treatment exhibit positive outcomes at a faster rate than those participating in degree programs. While degree programs require on average three years to show positive results in the aggregate,

occupational training renders positive returns shortly after the first year. There is a tradeoff, however, to the quick effects. Unlike degree programs, the positive earnings and employment differences tend to level off as time passes. The trend remains positive, but does not show growth in the later years of observation.

Paid internships tend to be a front-loaded service in terms of measurable outcomes, where the front-loading occurs via the wage subsidization. It is no surprise then that the positive treatment effects are measurably significant in the early stages of observation but tend not to persist over time. Paid internships were the most heavily funded of all training services rendered by DWS during the observed time period, but the trend analysis shows no lasting effects for the treatment. Initial reaction to these results may lead to the conclusion that the internships should not be funded as heavily. However, the regional analysis brings this conclusion into question. Both the male and female paid internships treatment groups in the Mountainland Region exhibited outstanding employment and earnings outcomes compared to their counterparts in the region's control group. The positive outcomes in the region also contradicted the statewide trend by persisting strongly over the full four years of observation. Because regions are allowed some flexibility in delivering training services, the specific nature in which the Mountainland Region administered paid internships may explain why the outcomes in the region were so measurably strong, and should be examined carefully before paid internships are dismissed as an ineffective and short-lived training treatment. While the regional administration of paid internship services may be informative for designing an effective training policy, an additional solution may be to offer paid internships in conjunction with a supplementary service, such as complementary classroom training, job search guidance, or the like.

Both life skills and unpaid internships generally showed disappointing returns on employment and earnings. The theoretical intent of employment subsidies is to provide the trainee an opportunity to receive on-the-job training, building both their marketable skill set and work experience. As such, it is fair to expect some positive, although slightly more modest outcomes resulting from the unpaid internships in comparison with other training services. It would also be a fair to expect that positive treatment differences take some time to manifest themselves in the labor market measures. This was not always the case for the trainees examined herein; unpaid internships showed positive employment differences, but the earnings differences were almost always negative. This begs the question of whether unpaid internships truly accomplish the policy goals for which they are designed. It should be noted by decision-makers, therefore, that while unpaid internships may indeed improve employment outcomes, it likely won't be the case that the individual would realize an increase in their overall earnings from any resulting employment effects.

In the case of life skills training, however, it is not surprising to see such weak labor market outcomes for the trainees. Due to the nature and content of the training, most of the individuals who participate in life skills training service face multiple social and economic barriers to entering the labor market. Receiving life skills training aids the

trainee in working through some of the barriers, but in no way is the training expected to completely overcome all challenges the recipient faces. Because this training is a pre-market activity and because other economic and social obstacles will still remain for many individuals, it is reasonable to expect that the life skills training itself does not lead to positive employment or earnings outcomes. From a policy viewpoint, it may be concerning to see that life skills actually shows strong negative labor market effects for the treatment group potentially leading to the conclusion that life skills training somehow impedes the ability for the trainee to acquire and maintain gainful employment. As discussed in earlier sections of this report, there are a few possible empirical explanations for this result. As an alternative explanation, it should be noted that the negative results do somewhat support a belief held by some policy makers that social assistance programs create disincentives for individuals to obtain and maintain gainful employment. However, this view cannot be validated using the current dataset and the question is beyond the scope of this report.

Probably the most interesting policy information derived from this research pertains to the role of completion in training outcomes. Initially, the approach taken to model the treatment effects did not account for completion. The justification for not using completion information was that the goal of the research was to evaluate the administration of the training service and not the merit of the training itself. The labor market benefits of increasing an individual's acquisition of training and education is a well-documented fact. Another reason is that it is essentially impossible to predict the probability of an individual completing a training program at the time of service determination. Therefore, in terms of the research informing the policies surrounding the administration of training services, it was important to understand how successful DWS is in effectively directing individuals to training services. However, when the employment and wage differences are dissected by completion status of the treatment group, it is clear that completion is a compelling factor in determining whether or not an individual will realize the full potential of earnings and employment gains from the training.<sup>1</sup> It is logical to conclude from these findings that adding programs to encourage completion are not only prudent, but in some cases absolutely necessary in order for the training services to be effective in terms of labor market outcomes and hence justifiable from a budgetary standpoint. Programs such as completion incentives and intensive counseling and monitoring could certainly prove to be worthwhile expenditures to be coupled with training service assignments.

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<sup>1</sup>See Chapter 10.

## References

- Abadie, A., & Imbens, G. W. (2006). Large sample properties of matching estimators for average treatment effects. *Econometrica*, 74(1), 235–267.
- Caliendo, M., & Kopeinig, S. (2008). Some practical guidance for the implementation of propensity score matching. *Journal of Economic Surveys*, 22(1), 31–72.
- Card, D., Kluve, J., & Weber, A. (2010). Active labour market policy evaluations: A meta-analysis. *The Economic Journal*, 120, F452–F477.
- GAO. (2011). *Multiple employment and training programs: Providing information on colocating services and consolidating administrative structures could promote efficiencies* (Report to Congressional Requesters). Washington, DC: Government Accountability Office. Available from <http://www.gao.gov/new.items/d1192.pdf>
- Greenberg, D. H., Michalopoulos, C., & Robins, P. K. (2006). Do experimental and nonexperimental evaluations give different answers about the effectiveness of government-funded training programs? *Journal of Policy Analysis and Management*, 25(3), 523–552.
- Heckman, J. J., LaLonde, R. J., & Smith, J. A. (1999). The economics and econometrics of active labor market programs. In O. C. Ashenfelter & D. Card (Eds.), *Handbook of labor economics* (Vol. 3A, pp. 1865–2097). Amsterdam: North Holland.
- Heckman, J. J., & Smith, J. A. (1999). The pre-programme earnings dip and the determinants of participation in the social programme. Implications for simple programme evaluation strategies. *The Economic Journal*, 109, 313–348.
- Heinrich, C. J., Mueser, P. R., & Troske, K. R. (2008). *Workforce Investment Act non-experimental net impact evaluation* (Final Report). Columbia, MD: Impaq International.
- Heinrich, C. J., Mueser, P. R., Troske, K. R., Jeon, K., & Kahvecioglu, D. C. (2009). *New estimates of public employment and training program net impacts: A non-experimental evaluation of the Workforce Investment Act program* (Discussion Paper No. 4569). Bonn, Germany: Institute for the Study of Labor.
- Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. *Journal of Economic Literature*, 47(1), 5–86.
- King, C. T. (2004). The effectiveness of publicly financed training in the United States: Implications for WIA and related programs. In C. J. O’Leary, R. A. Straits, & S. A. Wandner (Eds.), *Job training policy in the United States*

- (pp. 57–100). Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- Morgan, S. L., & Winship, C. (2007). *Counterfactuals and causal inference*. New York: Cambridge University Press.
- Mueser, P. R., Troske, K. R., & Gorislavsky, A. (2007). Using state administrative data to measure program performance. *The Review of Economics and Statistics*, 89(4), 761–783.
- O’Leary, C. J., Straits, R. A., & Wandner, S. A. (Eds.). (2004a). *Job training policy in the United States*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- O’Leary, C. J., Straits, R. A., & Wandner, S. A. (2004b). Public job training: Experience and prospects. In C. J. O’Leary, R. A. Straits, & S. A. Wandner (Eds.), *Job training policy in the United States* (pp. 289–310). Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- O’Leary, C. J., Straits, R. A., & Wandner, S. A. (2004c). U.S. job training: Types, participants, and history. In C. J. O’Leary, R. A. Straits, & S. A. Wandner (Eds.), *Job training policy in the United States* (pp. 1–20). Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- Orr, L. L., Bloom, H. S., Bell, S. H., Doolittle, F., Lin, W., & Cave, G. (1996). *Does training for the disadvantaged work?* Washington, DC: The Urban Institute Press.